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RESULTS OF FIFTEEN YEARS OF THE CANCER-CONTROL PROGRAM IN MASSACHUSETTS*

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BOSTON

FIFTEEN years ago, the Commonwealth of Massachusetts inaugurated a cancer-control program with three objectives: the prevention of cancer, the early recognition and treatment of the disease, and the increase of existing knowledge by the scientific analysis of every fact and record available. To attain these objectives, diagnostic cancer clinics, treatment centers, research and education were necessary. The care and treatment of the incurable case might have been considered for humanitarian reasons, but this activity did not come logically under the heading of cancer control. The Massachusetts Cancer Program from its inception has comprised five parts: statistical research, tumor diagnosis service, hospitalization, diagnostic clinics and education. The evolution of the program has been presented in the literature. An appraisal of the results of cancer control in Massachusetts, together with indications of future trends, is given in this report.

The evaluation of a program of cancer control differs markedly from that of one directed against a communicable disease. Within a few days in the presence of a smallpox epidemic, the results of vaccination are apparent. Even with rabies, the time element is short compared with that of cancer, in which years may elapse between the beginnings of a chronic irritation and a subsequent cancer. Neither measures directed at the prevention of cancer through the elimination of chronic irritations nor those attempting effective therapy may be evaluated until after an interval of years.

The best criterion of measurement is the adjusted death rate. Other criteria are the various delays before therapy, the increased interest of the medical profession and the laity, and the attendance at clinic and hospital. The period in which the Massachusetts Cancer Program has been functioning has been long enough to warrant appraisals by all these methods.

In the state-aided clinics, the delay between the first recognized symptoms of the disease and the time the patient presents himself to a physician is one measure of the effectiveness of education of the laity. In the early years of the cancer program, this delay averaged 6.5 months. Between 1936 and 1939, it was 5.3 months, and in 1940, 4.6 months. A similar estimate of the effectiveness of education is the percentage of patients with cancer who go to their physicians within the first month of recognized symptoms. In 1940, 21 per cent of the clinic cancer patients went to their physicians within the first month of their symptoms, as compared with 15 per cent in the early years of the program. A second period of delay is that between consulting the first physician and visiting the cancer clinic. This delay, which may be attributed to either physician or patient, or both, has been decreasing rapidly and is now about half what it was in the early years of the clinics. The third delay is between presentation at the clinic and the institution of treatment. The social workers in the clinics have helped to reduce this delay. About two thirds of the patients are treated within one week, and over 90 per cent within one month of first clinic visit. There has also been considerable curtailment in this period of delay since the early years of the clinic.

The sum total of these delays, however, amounts to more than one month in the majority of cancer cases in the clinics. Only a small percentage of patients receive therapy within one month of the first symptoms. In the early years of the clinics, the percentage being treated in one month was 3.1; in 1939, it had increased to 5.8. The shortening of all these intervals of delay points toward

*Read before the annual meeting of the clinic chiefs of the State-Aided Cancer Clinics, Boston, May 29, 1941.

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improvement in the cancer situation in Massachusetts (Table 1).

Although the adjusted cancer death rate is used for most comparisons, the actual number of deaths is of importance from an administrative standpoint,

TABLE 1. *Annual Percentage Change.*

Annual percentage reduction in delay of cancer patients before going to first physician	3.9
Annual percentage reduction in delay of cancer patients before attending clinic	4.4
Annual percentage reduction in delay of cancer patients between clinic and treatment	3.8
Annual percentage increase of number of physicians referring patients to clinic	10.5
Annual percentage increase in cancer deaths	2.3
Annual percentage increase of specimens sent to Tumor Diagnosis Service	4.5
Annual percentage increase of clinic admissions of cancer patients	11.0
Annual percentage increase of general-hospital admissions of cancer patients	4.7

since measures directed toward care and treatment depend on numbers rather than rates. During the period of the Massachusetts Cancer Program, the actual number of deaths has increased annually by about 2 per cent. During this same period, the clinic attendance of cancer patients has increased annually about 11 per cent, the number of specimens sent to the diagnostic laboratories about 4.5 per cent, and the admissions to general hospitals about 5 per cent. This latter figure is of particular significance inasmuch as additional facilities for cancer patients at the Pondville, Westfield and Palmer Memorial hospitals have been made available during the period.

Additional evidence is obtained from samples from the death records of 1932 and 1940. In 1932, 31.1 per cent of the fatal cases had never been treated in a cancer hospital for the disease. In 1940, this figure had been reduced to 15.8 per cent. Hospitalization for cancer is increasing far more rapidly than the cases of the disease.

Although the attendance of new cancer patients at the state-aided clinics has increased five times as fast as the deaths, only about 8 per cent of the cancer population are seen in the clinics. The other 92 per cent make use of other facilities for diagnosis.

The effect of the clinics, however, is of far greater consequence than the actual number of cases seen. Each clinic acts as a center of cancer interest for the surrounding territory, and the consciousness of cancer of both the public and the profession is enhanced. Moreover, teaching clinics furnish postgraduate instruction for the medical profession. Between sixty and seventy of these clinics are held each year, and over 1300 physicians attend them. Although the cancer clinics admit about 1800 new cancer patients each year, the total attendance comprising new and old cancer patients and persons who are found to be free of malignant lesions numbers approximately 21,000.

Since the opening of the cancer clinics, approximately 14,000 patients with cancer have attended the clinics. Forty per cent of these are still alive. At the end of ten years after coming to the clinic, 47.0 per cent of the patients with cancer of the skin were alive, 23.3 per cent with cancer of the mouth, 21.6 per cent with cancer of the uterus, and 15.6 per cent with cancer of the breast. Inasmuch as ten years after clinic admission the dying-off curve for the clinic patients is almost identical with that of the Massachusetts population, most of these cases may be considered to be cured.

The changing attitude of the public and the profession toward the cancer program may not be considered an actual measurement of accomplishment, but it does seem to be an indication of existing trends. During the period of the program, questionnaires have been sent to the physicians of the State several times requesting frank comments on the program. In the first few years, there were a large number of adverse comments coupled with constructive criticism. The latest questionnaire, answered by about 1500 physicians, revealed only one adverse comment. Some of the physicians who did not answer were doubtless not in sympathy with the program, but a change so great as this indicates the change in professional opinion. The physicians are also giving their time to address meetings of the co-operative cancer-control committees. In Boston, it was found that two thirds of the doctors were willing to speak, whereas in the smaller communities the percentage is often 100. Steadily increasing numbers of physicians are referring patients to the cancer clinics. In 1940, physicians referred 80.8 per cent of the patients to the clinics. This is in sharp contrast with the 20.1 per cent who were referred in the first year of the program. The number of physicians making use of the tumor diagnosis service has increased. Between 1927 and 1935, there were 421 physicians who used this service, and in 1940 there were 798. In the same period, the number of specimens increased from 2813 to 3907. The increase in the number of doctors using this service has been greater than the increase in the number of specimens. Monthly bulletins, containing excerpts from the cancer literature, and the volume *Cancer: A manual for practitioners*, which have been furnished by the department to physicians in the State, have been

well received, as evidenced by the large number of letters received from the profession.

The public has shown a remarkable change in attitude. In the early days of the program, it was rather difficult to obtain an audience of any size if cancer was the subject under discussion. Meetings were arranged, with talks scheduled on chronic disease and adult hygiene, simply to cover the subject of cancer. Today, the members of the co-operative cancer control committees number over 10,000 and usually have little difficulty in arranging for cancer meetings.

Real comparisons of the prevalence of disease between communities and between different intervals in the same community cannot be revealed by crude death rates, if the age-sex composition of the

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TABLE 2. *Average Annual Percentage Change in Rate of Mortality from Cancer (1920–1935) by Geographic Sections of United States.**

SECTION	TOTAL CANCER	BUCCAL CAVITY	STOMACH AND LIVER	PERITONEUM, INTESTINES AND RECTUM	SKIN	BREAST	FEMALE GENITALS	OTHERS
	%	%	%	%	%	%	%	%
Registration area, 1920 (38 states)	+1.01	−0.50	−1.04	+2.10	−1.75	+1.82†	+0.85†	+3.71
Northeast‡	+1.17	−0.48	−0.72	+1.98	−1.90	+1.42†	+0.55†	+3.53
Massachusetts	+0.50	−0.52	−1.00	+1.26	−1.93	+0.68	+0.09	+2.75

*All trends based on age-adjusted rates.

†Percentage computed by Gover.[1-3]

‡Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

states varies and the disease has a predilection for certain age groups. A common base of comparison mathematically figured, by adjusting the age distributions by states to a standard population, makes possible a more accurate appraisal. Gover's[1-3] comprehensive study of cancer mortality in the United States shows that great differences in adjusted rates occur between the different sections of the country, and the trends of these rates also differ. With Gover's method of comparison and some of her calculations, Table 2 was constructed. This shows the comparison between Massachusetts, the Registration Area of 1920, which included thirty-eight states, and northeast United States, which includes Massachusetts and eleven other states. The average annual percentage change in the rate of mortality from total cancer, from cancer of the peritoneum, intestines and rectum, from cancer of the breast, from cancer of the female genitals and from cancer of other organs was much less in Massachusetts. There was not much difference between Massachusetts and the Registration Area in cancer of the buccal cavity, in cancer of the skin, and in cancer of the stomach and liver. The decrease shown in cancer of the stomach and liver probably indicates improvement in diagnosis of the primary site of cancer, and that cases formerly called stomach and liver are now being assigned to other locations.

Inasmuch as a decided drop in the cancer rate among females began in 1935 in Massachusetts, additional computations were made of the adjusted rates of Massachusetts from 1900 to 1939, compared with the eleven states that comprised the Registration Area of 1900. Between 1900 and 1925, the trend for males was upward in both Massachusetts and the Registration Area, and the annual percentage increase was only slightly higher in the latter than in the former. Among females during the same period, the rates for Massachusetts and the Registration Area were both upward, but to a lesser degree than among males, and both annual percentage increases were almost identical. In the period of the Massachusetts Cancer Program, 1926–1939, the males in Massachusetts had a much lower annual percentage increase than the males in the Registration Area, whereas the females in Massachusetts had a 0.2 per cent drop, contrasted with an 0.7 per cent rise in the Registration Area (Table 3).

TABLE 3. *Annual Percentage Change in Adjusted Cancer Death Rates in Massachusetts before and during Cancer Program, Compared with Similar Periods for the Registration States of 1900.*

PERIOD	MASSACHUSETTS	REGISTRATION STATES OF 1900*
	%	%
Before program (1900–1925)		
Males	+2.37	+2.49
Females	+1.38	+1.31
During program (1926–1939)		
Males	+1.16	+2.19
Females	−0.21	+0.71

*Connecticut, District of Columbia, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island and Vermont.

* * *

This summarizes the accomplishments in cancer control in Massachusetts during the last fifteen

years. One cannot postulate that all the improvement has been due to the Massachusetts Cancer Program. The American Society for the Control of Cancer has worked for over a quarter of a century. The American College of Surgeons has been extremely active, and in the last few years the federal government has inaugurated an extensive cancer program. There may even be forces at work of a biologic nature of which we have no knowledge. However, it seems reasonable to assume that a part of this improvement is due to the constructive efforts of over 7000 physicians in Massachusetts, of the hospitals of this state, of the members of the co-operative cancer-control committees and of the Massachusetts Department of Public Health, which together constitute the Massachusetts Cancer Program.

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THE NATIONAL PHYSICIANS' COMMITTEE*

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AMERICAN medicine no longer enjoys the inviolable right to carry on undisturbed its program of medical care. Although it still commands the respect of its patients, it does not command the unchallenged obeisance of the nineteenth century. This is as it should be. Vast and far-reaching changes are taking place within the social economy of the Nation. Medicine, heretofore considered a profession but now designated by some as a trade, should not expect to escape. One has but to review the accomplishments in the field of medicine alone to realize how rapidly progress has taken place. In one hundred and fifty years, life expectancy in the United States has been raised from thirty-five to sixty-two years, almost 100 per cent. During this same period, smallpox has been robbed of its terror, diphtheria has been conquered, and typhoid fever, tuberculosis, diabetes and a score of lesser ailments have been subjected to control. Today, a child born into an average American home has the prospect of living more than ten years longer than a child born into a similar home in any other great nation of the world. During 1938, American medicine gave to the United States the most favorable health record of its one hundred and fifty years' history. In this same year, the Nation had the highest general level of health and the lowest death rate ever known in this country or for any comparable number of people anywhere in the world.

The social life of the Nation has undergone a change. On the one hand, widespread unemployment, low farm income and the continuation of conditions of general depression have made it difficult for an ever-increasing number of people to pay for the best medical service and proper hospitalization out of earnings. Concomitant with these conditions, the cost of medical care has increased, owing to many factors involved — not the least of which is the increasing complexity of diagnostic aids. There is at the same time a world-wide trend toward governmental paternalism and the false, suicidal doctrine that the "state" can provide a service and a security that the people cannot otherwise obtain. Most physicians are familiar with families in which the breadwinner, rather than accept a task not to his liking, goes on relief. How this affects the practice of medicine has been too well learned by many a conscientious physician.

Being socially minded, the government at Washington in recent years has attempted to brush

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aside the time-worn methods of medical practice, and suggests to the medical profession that it is time for federal control in this field, as in so many others. The Wagner Health Bill was introduced into the Seventy-Sixth Congress, and a health conference was summoned by President Roosevelt. A federal health survey, implemented by the WPA, purported to show the shortcomings of medical care in the Nation — on the heels of a year with the best health record in history! We live in an age of propaganda. This strong arm of the government was drafted to shake the confidence of the public in its physicians as a class. Compulsory health insurance loomed on the political horizon in the last Congress. Its supporters pointed to England, to Germany, to Denmark, to Sweden and to New Zealand as examples of successful compulsory health-insurance programs, making comparisons where comparisons were not only odious but impossible. And riding high on the wave of the whole program of social security, which as yet has a long way to go to demonstrate real security, medical care seemed about to become a political football, kicked off from midfield by its two largest groups of supporters, professors of sociology and economics and well-meaning but misled social workers.

It is true that organized medicine was slow to see the handwriting on the wall. It took small groups in California, in Michigan and in Washington to point the way to more modern methods of better medical care. The physician of the early twentieth century, like his ancestor of the nineteenth, gave little thought to social evolutionary changes in his neighborhood. He was content to go on his daily rounds, caring for all who sought his aid, receiving remuneration where the family exchequer permitted such payment, and caring for the remaining large group, with no reward but the satisfaction of serving his fellow man. He was proud of his labors, worthy of his hire, and gave little if any thought to the discussion of state medicine. An individualist, he saw no reason for relinquishing his claim on his patients so long as they claimed him.

Then, suddenly, the earthquake came, shaking the very foundations beneath him. Assistant Attorney General Arnold secured an indictment against the medical profession for practicing in restraint of trade. It is but fair to recall that the Committee on the Costs of Medical Care in its majority report had advocated group practice of medicine as an aid in extending medical care to a greater number of people. It is also but fair to recognize the efforts of certain groups in this country to establish plans for medical care, based on varying schemes — some good, some bad. But when the federal government entered the field in open attack against the profession, it failed entirely to realize that the extension of medical care in quantity must include a certain standard of quality to be acceptable to the medical profession.

In November, 1939, the National Physicians' Committee was formed, because it was recognized that for the past twenty-five years there had been evident a trend in political thinking and legislation affecting medicine, medical practice and health. This trend resulted directly in the introduction of the Wagner Health Bill. In May, 1939, the House of Delegates of the American Medical Association had opposed the Wagner Health Bill. Various groups and interests opposing this legislation came to the conclusions that there was real danger in legislation that would result in harmful, revolutionary changes in the system of medicine; that there was a real problem to be solved in connection with the distribution of medical service and hospital facilities; and that the public was uninformed or misinformed about the aims, objects, methods and achievements of American medicine. A group of twelve physicians formed the National Physicians' Committee for the Extension of Medical Service, a nonprofit, nonpolitical organization devoted to maintaining ethical and scientific standards and extending medical service to all the people, and to familiarizing the American public with the facts concerning these methods and achievements.

The American Medical Association has been criticized as reactionary, narrow and obstructive in its actions. Perhaps it has been, but never has it permitted a lowering of the standards of medical care. The association has also been criticized for not carrying on the work now being done by the National Physicians' Committee. It could not. The American Medical Association cannot change its policies on the basis of expediency, or adapt itself to meet emergencies in a short enough time to be effectual. It is exempt from income and social-security taxation as a scientific, educational body, and therefore cannot engage in a campaign within the political gates at Washington. There are many lay groups interested in the solution of these problems from whom the American Medical Association could not accept support.

What has the National Physicians' Committee accomplished to date? First, it has bent its energies on conveying to the public a *few* factors of such dramatic value that a continuation of the operation would make possible some concept of American medicine's progress and achievements. Let me illustrate how such small beginnings can develop.

In 1939, the Life Saver Company distributed billions of Life Saver candies. This firm started from scratch in a small Bronx garret in 1913 and, through continuous sales effort, built this relatively unimportant item into a total distribution, through chain stores, 800 wholesalers and more than 300,000 retail outlets, of $4,000,000. Incidentally, E. S. Noble, who did this job and confined his efforts to it, became the first assistant to the Secretary of Commerce. There is practically not a cigar-store or a drugstore counter that does not feature these little candies; there is not a twelve-year-old boy in the United States who does not know what a Life Saver is.

The Wrigley setup is an identical one. The Wrigley Company started from scratch and began selling a not quite respectable commodity. They began fighting the schoolteachers because the children took gum out of their mouths and stuck it under the seats, and the ministers because the undersides of the pews became lined with chewing gum. Ultimately, they imported chicle by the carload and sugar by the boatload until, in 1939, the Wrigley Company grossed $34,900,000.

The National Physicians' Committee, also starting from scratch, began its effort to inform and educate the public with two *Saturday Evening Post* two-page advertisements that cost $43,000, with additional costs for art and engraving that brought the total to nearly $50,000. Industrial firms put up the money to cover the entire cost of these two advertisements. They appeared on June 22 and July 13, 1940.

More important than this was a series of full-page advertisements that appeared from coast to coast in important newspapers. These were patterned after the *Saturday Evening Post* advertisements. This barrage resulted in a statement from Mr. Willkie committing himself to the cause of independent medicine, and a public statement of policy from Mr. Roosevelt prior to his election. All of us are now familiar with Mr. Roosevelt's message at the dedication of the Health Institute in Bethesda, Maryland, when he expressed for the government no intentions of socializing medical practice and lauded the personal relation between doctor and patient that now exists. This, together with the promise to discuss with organized medicine all future legislation affecting the practice of medicine, should at least indicate that concerted effort on our part can bring results.

Following the publicity in the *Saturday Evening Post* and in newspapers from coast to coast, since January 1 there has gone out from the office of the National Physicians' Committee in Chicago a weekly editorial service to more than 12,000 weekly and foreign-language newspapers in the United States. These releases are informative and educational, and should help to correct false impressions of American medicine gained by the public. Very few of these have been published in New Hampshire and Connecticut, but newspaper clippings from publications in February and March indicate 10 to 15 per cent actual publication. This editorial service is still in operation.

On April 4, a federal jury in Washington found the American Medical Association guilty of a "criminal conspiracy to restrain trade." The jury exonerated five officials of the association and fourteen distinguished physicians of the District of Columbia, at the same time convicting the American Medical Association and the Medical Society of the District of Columbia. The verdict is without sense or substance or meaning. Certain basic principles, which in their establishment involved no legal authority, have been challenged. To relinquish them would mean that laymen or lay organizations would have a legal right to provide medical service, that qualified doctors of medicine could no longer determine or influence the qualifications of hospital staffs and physicians with courtesy privileges, and that doctors of medicine would be denied the right to determine or significantly influence the educational standards for medical students, and the nature and quality of intern training. Should this come to pass, the quality and standards of medical service would be placed in jeopardy, and an army of quacks would compete in the open market for the patronage of the ailing and the sick. This decision will be appealed, if necessary, to the Supreme Court of the United States. In the meantime, the public must be informed and made aware of its vital interest in this issue. To this task, the National Physicians' Committee has set itself.

In certain states of the Union, notably California, Michigan, New York, New Jersey and Texas, attempts are being made to provide statewide service on a prepayment basis under medical-association auspices. The Wisconsin and Minnesota legislatures have passed enabling acts making possible the extension of such a service. Since January 1, 1941, two state societies — Ohio and Tennessee — have sponsored similar legislation. It is this sort of effort that must be encouraged; otherwise the public will be led along the road to compulsory health insurance as outlined in such acts as the Wagner Health Bill and the Epstein Bill.

The program of educating the public concerning a true knowledge of the facts of American med-

icine entails considerable expense. Let us see how the plan was worked out in Houston, Texas. The president of the local medical society appointed a chairman of a committee to co-operate with the National Physicians' Committee. The Houston Medical Society has a membership of approximately 400 physicians. Ten members were selected for the committee. The names, addresses and telephone numbers of all the members were placed on 400 cards, which were divided among the ten committee members. Each member of the committee reached by telephone the physicians assigned to him, explained the nature of the work that had been undertaken by the National Physicians' Committee, and asked them to contribute to the extent that they could without undue sacrifice. Ten dollars was suggested as a reasonable average amount. The president of the society wrote a letter to all the members urging them to co-operate. The committee met each week for a short period until the entire membership had been canvassed. Under the date of November 4, the chairman of the committee mailed his check in the amount of $2,313.50 to the National Physicians' Committee. This plan was effective; it resulted in great good to the members of the Houston Medical Society and can be adapted to any society.

American medicine has been called on to aid in national defense by manning the selective-service medical boards, and by supplying physicians to the Army and the Navy. In addition, Britain has called for 1000 physicians to help fill gaps in its defense program. American medicine is faced with the possibility of drastic changes in its structure. We must not permit the quality of medical service to suffer. The National Physicians' Committee has set itself the task of securing public approval of the standards set up by American medicine and endorsement of only those changes that shall eventuate in improved medical care. The accomplishment of this purpose necessitates the understanding, co-operation and financial support of every county medical society and of the rank and file of the profession.

179 Allyn Street

THE VALUE OF AUSCULTATION OF THE ABDOMEN IN INTESTINAL OBSTRUCTION

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AUSCULTATION of the abdomen is a valuable aid in diagnosis of a number of functional and organic conditions of the stomach and intestinal tract. It is particularly useful in cases of intestinal obstruction and acute appendicitis, and four cases of the former condition are cited to illustrate its use.

CASE REPORTS

CASE 1. A 60-year-old farmer complained of severe, cramplike pains in the abdomen. The pain had begun at 4 a.m., waking him out of his sleep, and had continued with increasing severity until examination at 11:30 a.m. The pain was intermittent in character. The patient had vomited twice and had taken an enema, without result. His digestion had always been good; his bowel movements had been regular.

With the exception of the abdomen, physical examination was negative. The abdomen was not distended, although there was a suggestion of rigidity in both lower quadrants. There was marked tenderness at the umbilicus, which was also the area of the maximum intensity of the pain. The temperature was 99°F., and the pulse 85. On auscultation of the abdomen, peristalsis was intermittent. The sounds coincided with the intermittent attacks of pain. The abdomen was completely silent for intervals as long as 2½ minutes. The sounds were rather faint and lasted not longer than 10 seconds. The spasms of pain were severer than the sounds seemed to indicate. From the character of the sounds and of the pain and from the silent intervals, a diagnosis of intestinal obstruction was made. His immediate removal to the hospital was advised.

On admission to the hospital 2 hours later, the symptoms had not changed appreciably. The white-cell count was 14,000, with 85 per cent polymorphonuclears.

At operation, a volvulus of the middle third of the ileum was found, involving about 20 cm. of the intestine, which was purple in color. Both visible and tactile pulsation of the mesenteric arteries and their branches was evident, and nothing was done except to relieve the obstruction. The patient made an uneventful recovery.

Comment. In this case, the onset of pain was at 4 a.m. Operation was performed at 1:30 p.m., an interval of 9½ hours. Peristalsis was present, though faint and infrequent up to the time of operation. The section of the intestine involved was still viable.

CASE 2. A 51-year-old farmer began to have pain in the right lower quadrant of the abdomen at about 5 p.m. It came on after finishing a hard day's work in the fields. The pain was colicky to begin with, later on becoming constant. As time went on, it increased in severity. A physician told the patient that he was having an attack of indigestion and gave him some "medicine." The pain persisted

all night, and the patient vomited twice. I saw him the next morning.

Physical examination showed a thin, wiry man who was apparently suffering a good deal of pain. He did not look particularly ill. The temperature was 99.5°, and the pulse 88. The abdomen was not distended, and there was no rigidity. There was considerable tenderness in the right lower quadrant in the region of an old appendectomy scar — the appendix had been removed 6 years before. Peristaltic sounds were present but faint and infrequent.

Because the appendix had been removed and there was no distention or rigidity, I considered it safe to wait until afternoon before deciding what should be done. His wife was told to give him an enema.

At 4 p.m., his condition was much worse, although the pain was not quite so severe. The face was flushed, the respirations were increased, the temperature was 101°F., and the pulse was 100. Peristalsis was entirely absent. The abdomen was distended, and there was extreme tenderness in the right lower quadrant. The patient was taken to the hospital, where an immediate operation was performed.

On opening of the abdomen, there was an outpouring of dark-colored fluid. An area of the ileum, 25 cm. in length, just proximal to the cecum was black. There was a thick band of adhesions originating at the stump of the appendix and attached at its other end to the mesentery of the lower end of the ileum. The devitalized loop of intestine was resected, and an anastomosis was done. The patient died the following day.

Comment. This patient was seen 5 years ago, when the value of auscultation of the abdomen was not appreciated in cases of intestinal obstruction. The delay of 8 hours in sending the patient to the hospital was due to the fact that he did not present the cardinal signs of intestinal obstruction. Experience now shows that when the typical signs of obstruction, such as distention, fecal vomiting and a rise in temperature and pulse rate, become evident, it is often too late to save the patient. In this case, it should have been appreciated that the character of the peristalsis indicated advanced obstruction with beginning peritonitis. The sounds were faint and infrequent, a finding that is characteristic of the last stage of viability of the intestine. If the patient had been operated on at that time, he might have survived. Eight hours later the condition was hopeless.

Case 3. A 43-year-old woman complained of abdominal pain. She had been in good health until 2 years previously, when she was operated on for an ovarian cyst. Following this operation, her health had been good until 2 months before I saw her, when she began to complain of vague abdominal pain. One month later, the pain became localized in the left lower quadrant. Three weeks later, the pain increased in severity, and the patient noticed a mass in the left lower quadrant. Three days before I saw her, the mass increased in size, together with an increase in pain and tenderness. On the previous day, the patient had vomited and had been unable to retain anything on her stomach.

Examination showed a long linear scar, 9 cm. in length, extending downward from the navel. The abdomen was greatly distended. A mass, the size of a grapefruit, was palpated in the left lower quadrant. It was extremely tender. Active peristalsis was audible over this mass and sounded close to the ear. The diagnosis of intestinal obstruction was made, and the patient was removed to the hospital.

At operation, many closely matted loops of intestine were found just beneath the abdominal wall and outside the peritoneum. A rent in the peritoneum, about 8.0 cm. in length and corresponding to the old scar through which the intestines had emerged, was found. The intestines were not badly discolored, and seemed viable. The adhesions were separated, and the tear in the peritoneum was sutured. The patient died on the 3rd day after operation.

Comment. In this case, death was probably due to the length of the operation (2 hours), which was occasioned by the attempt to break up innumerable adhesions. At the time of examination, there was some question concerning the nature of the mass, but following auscultation, a definite diagnosis of intestinal obstruction was made.

Case 4. A 37-year-old farmer was seen at the office. He complained of cramplike pains in the abdomen of 2 weeks' duration. For 3 days previously, they had been increasing in severity. His appetite had been poor; he had lost weight and strength.

On physical examination, the abdomen was soft; there was no distention or rigidity; no masses were felt; there was slight tenderness in the left lower quadrant, where most of the pain was located. Peristalsis was active and loud. Rectal examination was negative. The white-cell count was 11,000, with 65 per cent polymorphonuclears.

There did not seem to be any acute condition at the time. The patient was given phenobarbital to quiet down the peristalsis and told to go home and take an enema that evening and the following morning.

The next morning, his wife called up to say that he had had a very uncomfortable night, with a great deal of pain. The enemas had been unsuccessful. He had not vomited, and the temperature was normal. Physical examination was essentially the same as the night before, except that there was complete absence of peristalsis. At intervals over a period of an hour, no sounds were audible. There was no distention, no rigidity and no more tenderness than there had been the previous afternoon.

Because of complete loss of peristaltic sounds, the patient was sent to the hospital with a tentative diagnosis of intestinal obstruction. A surgical consultant saw him soon after arrival and noted no indications of an acute abdomen. The diagnosis was intestinal grippe, and the administration of salts was advised. The patient felt quite well during the afternoon, but had a very bad night. A quarter of a grain of morphine was necessary to stop the pain. The following morning, I saw the patient again, with the surgeon and two other physicians. They agreed that he did not have an acute abdomen and advised keeping him under observation. The blood count, temperature and pulse rate were normal. The tongue was coated. The abdomen was soft; there was no rigidity and only a slight degree of tenderness in the midline below the navel. However, at this time there was slight distention in the suprapubic region. The peristaltic sounds were completely absent.

During the afternoon, the patient complained of a great deal of pain. Toward evening, distention of the abdomen became marked. The temperature was 100°F., and the pulse 105. The peristaltic sounds were completely absent. The face became flushed and drawn. The consulting surgeon was again called and was convinced that there must be some trouble in the abdomen.

At operation, a mass was palpated in the descending colon about the size of a small orange, and proximal to the mass, about 46 cm. of intestine was distended and black. The patient's condition was so poor that nothing more than an enterostomy was attempted; he died the following afternoon.

Comment. My diagnosis in this case was based on the presence of hypermotility at the first examination, and complete absence of peristalsis noted 14 hours later. Until 3 or 4 hours before operation, it was the only positive physical sign. It preceded the first rise in temperature to 99.5°F. by 12 hours. It preceded distention of the abdomen by 36 hours. Neither the pulse rate and blood count — the white-cell count just before operation was 10,000, with 77 per cent polymorphonuclears — nor any other physical finding was indicative of a serious abdominal condition.

At the beginning of intestinal obstruction, peristalsis is almost continuous, loud and usually high pitched. The bowel, which is not yet devitalized, is making an effort to overcome the obstruction. A few hours later, peristalsis is still active, but fainter. The musculature of the bowel is becoming fatigued and does not respond so strongly to stimuli. After twelve hours, peristalsis is considerably diminished, and becomes intermittent with intervals of sometimes two minutes between the sounds. By this time, not only is the bowel greatly fatigued, but there is probably a beginning peritonitis, owing to interference with the circulation and the production of toxins, which invade the visceral peritoneum through the damaged wall of the bowel. The last stage, and the one in which the patient most frequently arrives at the hospital, is that of beginning distention, frequent vomiting and complete cessation of peristalsis; at operation, a section of the bowel is found to be gangrenous.

My experience leads me to believe that, so long as peristaltic sounds are heard, the bowel is not completely devitalized and that the chance for recovery following operation is very good. The more active the peristalsis preceding operation, the better the chances for recovery. After some experience in auscultation, one can predict with considerable accuracy the condition and color of the bowel that will be found at operation. If peristalsis is active and loud, the section of the bowel involved will be congested and red or pink. If the peristalsis is faint and intermittent, the bowel will be purple. If peristalsis is entirely absent, the bowel will be black. In all but the last stage, the circulation can probably be restored if the obstruction is relieved.

Cessation of peristalsis seems to depend on infection or irritation of the peritoneum. It most commonly occurs in such conditions as intestinal obstruction, acute appendicitis (before and at the time of rupture) and rupture of a gastric and duodenal ulcer. In cases of retrocecal appendicitis, peristalsis does not stop, because the appendix lies outside the peritoneal cavity. Cessation of peristalsis also depends on the continued spread of peritonitis. When peritonitis becomes localized, as in cases of walled-off inflamed appendixes, peristalsis begins again, and may be hyperactive if there is partial or complete obstruction.

Conclusions

Auscultation of the abdomen is a valuable method of diagnosis in cases of early intestinal obstruction.

The condition and color of the bowel can often be predicted by the frequency and character of the sounds.

EWING'S TUMOR

Report of a Case Demonstrating the Characteristic Periodic Course

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BOSTON

THE need for familiarity with the natural history of Ewing's sarcoma of bone has been a common theme of students of the disease:

> A study of the clinical course of the primary malignant bone tumors has always attracted much less attention than the morbid pathology of these tumors. . . . A complete, well-taken clinical history very frequently can decide the question of the diagnosis in cases histologically obscure.[1]
>
> It has not been generally known that the clinical course [of Ewing's tumor] is rather characteristic. . . .[2]
>
> Most of the mistakes in diagnosis can be traced to failure to obtain a careful clinical history. . . .[3]
>
> Although the history may disclose little of value unless one is accustomed to bring out facts and to evaluate them, it often clinches a diagnosis for the expert. . . .[4]

This report is presented as a comprehensive record of the clinical entity, as a means of stressing the medical obligation of early diagnosis and as a contemporary memorandum on the urgent problems arising in management. The case is particularly appropriate because the patient was an intelligent fourth-year medical student and, later, recent graduate, who maintained an alert interest in the manifestations of his disease and a scientific zeal for objective analysis of its course. An intensive study of the case was possible because of his willing co-operation in all reasonable procedures. The validity of the observations are due to his lucid and incisive discernment.

CASE REPORT

In September, 1938, a 24-year-old medical student experienced a "catch" in the left hip that caused a limp for a day or two. This was so slight that he recalled it only after being reminded of his lameness by associates. He had been in unusually good health during the preceding summer and had gained weight, but at the time of the "catch" had begun to feel "run down" and less energetic. He attributed this physical depression to intensive work as a clinical clerk, lack of regular exercise and loss of sleep during obstetric service.

About October 1, he climbed Mt. Washington (6293 feet) and during the rapid ascent noticed cramps in the left thigh in the region of the groin. This was not enough to deter him, however, and the summit was attained and the descent accomplished, without further distress. He was particularly fatigued after his trip and felt stiffened in his muscles for 2 days. For about 4 or 5 days afterward, he was aware of a "crick" in the left groin.

A fortnight after the excursion, he suffered the first of a series of attacks of pain in the left groin, each lasting 3 to 4 days and occurring about every 2 weeks. He observed that the discomfort was not associated with any particular movement of his leg, and that there was no prompt exacerbation following strenuous exercise, although attacks often followed exercise after 2 or 3 days. At first, the pain was mild and did not dissuade him from playing squash, but every recurrent attack was of increasing severity, until toward the end of November the pain was sufficient to prevent sleep.

The attacks presented the following sequence of events: there was first a night of insomnia, during which the patient could not seem to find a comfortable position for his leg; then, for a day, a diffuse discomfort in the groin, accompanied by paresthesia, formication and hyperesthesia of the skin, and by an insistent malaise and fatigue; next, there was a more or less continuous dull aching, which was regional and not yet localized; and finally, with increasing severity, intense localized pain, throbbing in character, so that the patient could count his pulse by it. The acme of discomfort was reached by the 3rd or 4th day of the attack, after which there was gradual subsidence.

In the late fall, the patient was forced to return to his home village, to "ride out" episodes of pain. Shortly after he returned to Boston to resume medical studies, he became incapacitated again. During the days between episodes, he did not experience any functional loss in the leg and seemed fully recovered. Early in December, he had pain enough to keep him awake 2 nights, with discomfort during the day. Toward the middle of the month, however, there was complete remission of pain, and he felt well enough to plan a skiing expedition for the holidays. On December 17, he had played both ice hockey and squash and had noticed no distress afterward. However, on December 18, he began to feel a "gnawing discomfort" returning in the left groin, and by December 19 he was suffering intense pain that radiated to the left testis. This was the worst attack of all. The patient could not sleep that night but attempted to go to school the next day. Unable to remain there because of the distress, he consulted a general surgeon, who found that the patient was limping but had no limitation of motion of the left thigh. There was a loss of power in flexing the thigh against resistance, and a roentgenogram showed roughening of the lesser trochanter. The patient had taken along charts in color, on which he had shown the incidence of episodes and their relation to exercise, and this is said to have given the impression of so-called "medical-student anxiety." The diagnosis was traumatic detachment of the iliopsoas tendon, presumed to have occurred during recent spirited exercise.

That evening, morphine was required, and the patient was removed to his home in the country, where he lay on the living-room sofa for 3 days, refusing to be carried upstairs because the slightest movement of the leg intensified the continuing distress. Although morphine was given in liberal amounts, the pain was never completely

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relieved. During this episode, he had a temperature of 102.5°F., and there was vomiting but only slight nausea.

The patient was admitted to a Boston hospital, where he was seen by a distinguished internist on December 24. The admission temperature was 101.5°F., after which there was, for 4 days, a gradual fall to normal. There was also slight leukocytosis (white-cell count, 11,800), with 77 per cent polymorphonuclear neutrophils. Subsequent white-cell counts were 8750 and 6650. The red-cell count was 4,360,000, with a hemoglobin of 80 per cent (Sahli). The carbon dioxide combining power ot the plasma was 47 vol. per cent, on the 7th hospital day. Roentgenograms of the pelvis and left hip were interpreted as showing no bony

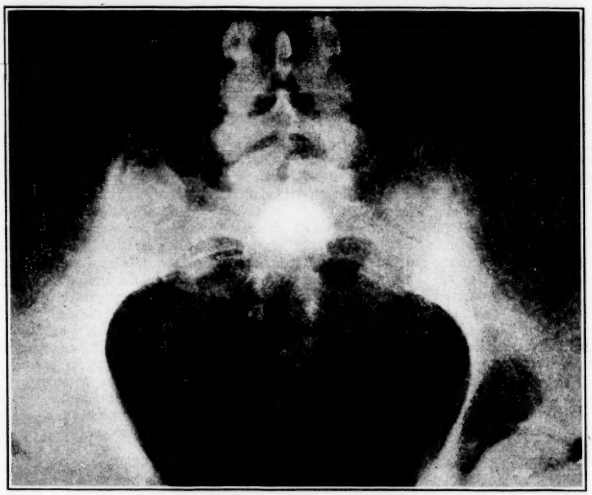

FIGURE 1. *Roentgenogram of Pelvis (February 8, 1939), Showing a Rarefied Area in the Left Ilium adjacent to the Acetabulum.*

abnormalities. It was the consultant's opinion that some infectious process was subsiding, and the discharge diagnosis was "iliopsoas spasm, cause unknown."

After 10 days' convalescence at his home, the patient attempted to return to school, against his physician's advice. Shortly, he suffered another attack of pain, not so severe as the preceding seizure but requiring morphine on 2 successive nights. After a week of comfort, there was recurrent pain, and then a short free interval before a 3rd paroxysm. During this attack, on February 7, 1939, the patient was admitted to the Joseph H. Pratt Diagnostic Hospital. He stated that on the night before admission he had suffered the most intense recent pain, and had received several ¼-gr. doses of morphine by mouth, but, even though he was still in considerable distress, he believed that the current attack was subsiding.

It was learned that the patient had been a rather delicate child but was afterward healthy and vigorous. His tonsils and adenoids had been removed when he was 6 years old. At the age of 9, he had had lobar pneumonia, and during the illness an appendectomy had been performed. He had broken his left thumb in a scuffle at school, and this had healed promptly and without complications. He had suffered no other injuries of note, although in playing football he had undergone considerable roughing. He had had hay fever every August since the age of 12. The family history revealed that his mother had had a tuberculous fallopian tube removed, and that a paternal uncle had died, at the age of 30, from embryoma of the testis.

Physical examination showed a very well-developed and well-nourished young man. The only abnormal findings were those about the left hip: generalized protective muscle spasm, demonstrated by attempted rotatory movements of the thigh and by the straight-leg-raising test. There was no evident tumefaction or inflammation externally, but by rectal examination there were fullness and point-tenderness in the left pelvic wall. The patient complained of pain in the left groin during this examination. Another point of tenderness was found deep in the left buttock centrally.

The temperature was 101°F.

The blood showed a red-cell count of 4,750,000 with a hemoglobin of 74 per cent (Sahli), and a white-cell count of 9300 with 69 per cent polymorphonuclear cells and 2 per cent band forms. The sedimentation rate was somewhat elevated: 24 mm. in one hour, by the Westergren method. The urine contained no albumin or Bence–Jones protein. The blood phosphatase was 1.0 Bodansky unit. A roentgenogram of the pelvis (Fig. 1) showed an oval-shaped area of bone rarefaction in the left ilium adjacent to the acetabulum. The cortex in this region was thinned, and there was a faint outline of a soft-tissue mass projecting into the pelvis at a point beside the rarefied bone. In a review of the previous roentgenograms (taken in December, 1938), a slight but definite rarefaction could be seen. The findings were considered highly suspicious of

primary malignant bone tumor; the diagnoses of Ewing's sarcoma and lymphoblastoma were considered. However, on the assumption that osteomyelitis was the likely morbid process, an orthopedic surgeon decided on osteotomy.

At operation on February 9, the left ilium was entered posteriorly, and not pus but a dark, reddish, fleshy tissue was found. This had already invaded the gluteal musculature. Frozen sections proved the diagnosis of sarcoma. The pathologist's report was, "atypical Ewing's sarcoma, with well-formed reticulum." Tumor cells were seen within the lumina of blood vessels. The tissue also showed changes of recurrent inflammation.

Following the operation, there was extreme pain for 2 days, only fairly well controlled by maximum doses of dilaudid. On February 14, the patient was transferred to the Collis P. Huntington Memorial Hospital, where irradiation therapy from the million-volt machine was started. This was directed over the left pelvis, from all sides (15 x 15 cm. field), 200 r daily for 4 days, then 300 r daily for 14 days. There was relief from pain after the third day of treatment, and there was only slight roentgen sickness in spite of the large amount of radiation. Toward the end of February, the patient suffered an attack of what seemed to be grippe, with fever, cough and sore throat. When he was discharged on March 3, he had received a total of 3600 r. By March 25 (during ambulatory treatment) he had received 1500 r in addition, a grand total of 5100 r.

In March and April, the patient seemed to be making a progressive recovery. He was eating heartily and gaining weight. He was able to return to medical school but used crutches to avoid trauma to the left hip. He even played ball by hopping on the unaffected leg. At a follow-up visit on March 21, his physician found, on rectal examination, no remaining tenderness over the rami of the left pelvic bones but some soft-part thickening just posteriorly. The red-cell count was 4,010,000 with a hemoglobin of 68 per cent (Sahli), or 9.5 gm. per 100 cc. During these months, the blood sedimentation rate (Westergren) was normal, 4 and 8 mm. in one hour. The blood phosphatase was 1.25 Bodansky units.

On April 29, after 2 months of complete freedom from pain, the patient noticed a dull ache in the left shoulder; this had begun simply as an uneasiness noted during a medical-school examination. It became more pronounced during the evening, and through the next day, the pain increased steadily and kept him awake in the night. It was centered at the head of the humerus and was of a deep, boring type, with constant aching. By the 2nd day, the pain was severe and throbbing. The patient recognized that its character was identical with that of the paroxysmal pain he had suffered in his hip. There was no interference with motion of the left arm, and use of it did not increase the pain, but there was slight pain on complete inward rotation of the arm. The patient was admitted to the Outpatient Department of the Huntington Hospital, where a roentgenogram was interpreted as showing a small area of decalcification in the proximal end of the left humerus. Daily irradiation was administered from May 1 through May 9, again with the high-voltage machine, a total of 1700 r to the left shoulder being given. The pain seemed to be increased in the evening after the first treatment, and on the 2nd day of irradiation there was severe nausea, but before the third treatment the pain was much lessened. By the 4th day, the patient was so much improved that he was able to make a trip to New York City for an interview about his proposed internship there.

On May 9, the patient was readmitted to the Pratt Hospital because, although he had had only slight residual discomfort in the left shoulder following irradiation, he had noticed, a day or so before entrance, discomfort in the right upper chest anteriorly, associated with other pain of rather vague but moderately severe character, gradually centering about the 3rd dorsal vertebra. The chest pain had awakened him in the night before entrance, and at that time seemed to be aggravated by deep respiration. On admission to the hospital, the relation to respiration was not so evident, and the discomfort seemed to be decreasing. Physical examination showed the patient to be in apparent good health, and an increase in weight since the February admission was apparent. There were no abnormal signs in the chest, and a roentgenogram of the thorax was entirely normal. The left shoulder showed some erythema of the skin following the recent course of irradiation, but was otherwise apparently normal. The operative scar across the left buttock was well healed; there was no induration or tenderness. There was slight pigmentation about the left hip from the irradiation in February, and a lack of hair in this area. The muscles of the left thigh and leg were flabby, and there was some wasting as compared with the firm muscles of the right leg. There was an increased patellar-tendon reflex in the left leg, and slight, transitory ankle clonus. The thigh could be rotated without discomfort. The hip joints seemed equal in motion. There was no Lasègue's sign on either side. The hemoglobin determination was 78 per cent (Sahli), and the white-cell count was 5300. The sedimentation rate was normal (10 mm. in 1 hour, 21 mm. in 2 hours) by the Westergren method. Roentgenograms of the whole skeleton were made at this time. The lesion in the left ilium appeared to be somewhat filled in by reparative bone. There was nothing in the remaining parts of the skeleton to suggest metastasis. Repeat films of the left humerus showed normal bone detail in the region of the greater tuberosity. The highest temperature was 98.8°F. It was decided that the clinical evidence for a new lesion in the upper left humerus was convincing, but that the vague and nonprogressive symptoms related to the upper back and right chest were of less significance and were possibly caused by "overawareness" on the part of the patient.

During May, there were hints of continuing disease. The left shoulder was still affected, and was painful when jarred in games of catch. The patient was less vigorous and less enthusiastic. He had vaguely defined pains in the neck, back and chest. In filing papers, he had to stop frequently because of backache. There was once an alarming, sudden grating sensation on flexing the back, and a physician was consulted, but no abnormality was demonstrated. Appetite was poor, and insomnia became frequent. However, it was pointed out to the patient that he had repeatedly normal temperature readings, and a normal sedimentation rate and leukocyte count; it was explained to him how easily undue apprehension, and frustration of his strong desire to go ahead with his internship in spite of the dire outlook, might cause his pains and ill-health, through the mechanism of psychoneurosis. Thus, a regrettable delay in treatment ensued.

On May 28, the patient was readmitted to the Pratt Hospital, looking haggard and complaining of discomfort in the upper dorsal spine, associated with interscapular aching and muscular tenderness; point tenderness was found over the 3rd dorsal vertebra. Vague occipital headache was present. There was also discomfort at the lumbosacral junction. Another point of tenderness was discovered on the right 11th rib, in the midaxillary line; no friction rub could be detected, but there was slight soreness associated with deep respiration. Roentgenograms

showed right pleural metastases, although the spine appeared to be normal. The patient had a temperature of 100.2° F., a white-cell count of 8750, a relative polymorphonuclear leukocytosis (91 per cent) and some shift to the left, and an increase of the sedimentation rate, by daily, serial tests. The serum phosphatase (alkaline) was still low — 0.85 Bodansky unit. Focal roentgen-ray therapy was reinstituted. The patient was taken daily by ambulance to the Huntington Hospital for treatment by the million-volt machine.

The episode that made rehospitalization necessary was the first of a series of six, which took place at fortnightly intervals throughout the summer (Fig. 2). Every episode was announced by new pains, as well as by malaise and rigors, and was confirmed by a striking rise in the sedimentation rate and by fever (of slight to moderate degree) and rise in the leukocyte count. Irradiation was increased at every exacerbation, and the bombardment was followed, more or less promptly, by relief from pain and by subsidence of the "fit of illness." As the vital signs reapproached normal ranges, and the sedimentation rate lessened steadily, there occurred regularly a period of comfort and a betraying appearance of marked improvement. This was always short-lived, however; new pains soon arrived to announce the next cycle.

The first period of relief, in the early days of June, gave way to a paroxysm of distress about the spine: a "glass back," due to alarming muscular spasticity, was evident. There was a return of pleuritic pain, and later a friction-rub, this time at the left costal border, along with a point of tenderness. Marked prostration signified the severity of the attack; morphine was required for the mounting pain. The patient was transferred to the Huntington Hospital for intensive irradiation. In spite of this treatment, he had much pain for several days — as well as exhausting nausea and vomiting, which were attributed to the heroic therapy. Roentgen sickness was from then on an enervating complication. The vomiting was of a pernicious type, preventing proper fluid and caloric intake. Nausea was not alleviated by intravenous glucose and saline solutions, nasal oxygen or peroral and parenteral thiamin chloride.

The patient was taken back to the Pratt Hospital in mid-June, at a time of striking improvement. For a few days, his progress was encouraging. Roentgenograms indicated complete disappearance of the pleural lesions: it seemed that the therapeutic weapon was competent. Yet pleural discomfort was still present, and when the patient coughed he was conscious of tender points along the spine.

The next flare-up was predicted by throbbing headache, which developed during the last week of June and reached its acme by the 2nd day; it was left sided, over the eye. A roentgenogram of the skull (Fig. 3) showed

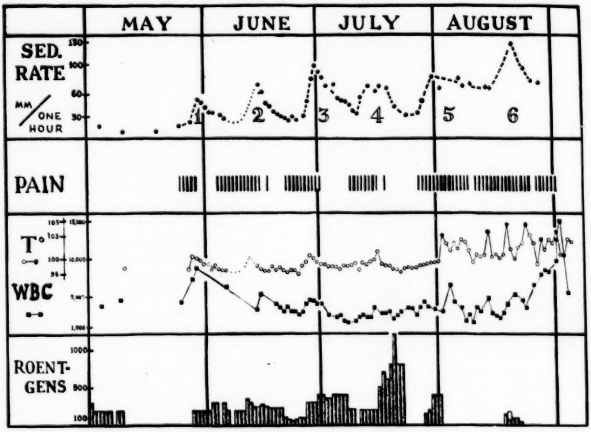

FIGURE 2. *Chronological Chart of Sedimentation Rates, Pain, Temperatures, White-Cell Counts and Radiation Therapy.*

scattered lesions in the calvarium. There was slight epistaxis. It was necessary to direct irradiation to the head, and this entailed interruption of the program of systematic coverage then in progress. After the second treatment to the head, the patient was decidedly more comfortable. The headache returned after another day, in spite of continued irradiation. As in previous attacks, other areas were excited, and throbbing pain developed along the right pelvic brim. (Local hyperesthesia alone had been noted 2 weeks earlier, at an analogous time in the preceding episode.) There was also intense pain in the lower left thigh. At length, improvement was attained, and in early July there was a series of days without pain, and with only the relentless x-ray nausea.

The fourth episode in the generalization of the disease occurred in mid-July, and was marked by pain in the left arm and, shortly thereafter, by severe pain in the right shoulder and arm and in both thighs. Neither at this time nor, in fact, during any episode did pain occur in the extremities distal to the elbows and knees. At this exacerbation, the patient experienced symptoms remembered in association with the original lesion: point-tender-

ness in the left buttock and paresthesia in the left groin and about the hip. It had to be admitted that roentgen-ray therapy was being used for its palliative effect alone, and that more of the noxious irradiation than the weakened condition warranted would be needed for the widespread lesions.

There was about a week of some comfort (toward the end of July) before the fifth episode began. Pain was localized once more in the left hip and groin, in the right shoulder and neck, associated with marked lameness of the musculature, and in the right chest, with respirations; point tenderness in the 5th rib, anterolaterally, could be elicited. A short time later, pain was also

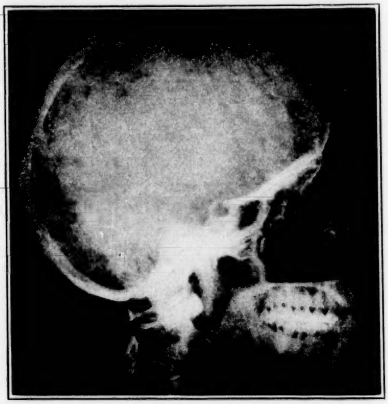

FIGURE 3. *Roentgenogram of Skull (June 24, 1939), Showing Scattered Metastatic Lesions in the Calvarium.*

localized along the left costal border anteriorly (aggravated by hiccough), in the occiput and across the back at the level of the 12th dorsal vertebra.

On August 1, the patient was transferred to the Huntington Hospital because it was not decided to begin treatment with a purified Coley's toxin (concentrated filtrate of *Bacillus prodigiosus*). He had become unnaturally lean. At the time of transfer, the fifth episode was near its height, the pain being most marked in the left iliac crest and in the right chest. On August 2, the first dose of filtrate, given intramuscularly, was followed in 3 hours by a severe chill, a sharp fever of 103°F. and convulsive vomiting. After 2 weeks, additional and successively stronger doses were given every 4 or 5 days — six injections in all. Intravenous barbiturates alleviated the vomiting.

A brief respite on August 10 marked a point analogous with the time of relief experienced during subsidence of previous episodes. But prompt return of back pain (dorsolumbar and cervical) indicated the proximity of the ensuing spell. There were warnings also in occipital and left frontal headaches, which increased and became throbbing in character during mid-August, and in anesthesias of the left lower lip, adjoining skin and adjacent buccal mucosa. In addition, on August 16, diplopia appeared; there was a left external rectus palsy. During these days, pain was again present in the left iliac crest, in the lower right chest laterally and in the lumbar region. A striking spasticity of the left upper rectus muscle of the abdomen, which had been noted in conjunction with the left costal-border distress early in the month, reappeared. Very severe back pain was precipitated by an injection of filtrate on August 19. A continuation of the mid-August seizure was exhibited by distressing pleuritic pain, with palpable friction-rubs, first in the left side and then in both. The throbbing left-sided headache was recurrent; there was a discharge of bloody, tenacious mucus from the left nostril. Associated with left iliac pain, the adjacent femoral musculature showed continual and painful spasm, with later local pitting edema and a peculiar doughy consistence.

Roentgenograms in mid-August demonstrated apparently clear lung fields. There was erosion of the left iliac crest; the hip joints were normal; the site of the original tumor appeared to be somewhat more filled in by reparative bone. In the skull, no abnormal changes could be detected in the sella turcica, petrous ridges and paranasal sinuses; the rarefied foci throughout the cranium were not so sharply defined as formerly.

Toward the end of August, and at a time of progressively slowing erythrocyte sedimentation, the patient became more vigorous and had several comparatively comfortable days. Morphine was required, nevertheless, at regular intervals, and even in large doses did not completely relieve distress. There was excruciating pleuritic pain, and all the other familiar pains were revived, following a fifth injection of filtrate on August 28.

Terminally, there was respiratory embarrassment. Brief periods of hyperpnea and polypnea began to appear about a week before death. On September 3, the patient had noted marked air-hunger in the early morning, and this became his main concern in the forenoon. A transfusion did not lessen the dyspnea. The breathing was of the Kussmaul type, with terminal expiratory effort. A severe acidosis was indicated by a plasma carbon dioxide combining power of 13 vol. per cent. Examination of the chest indicated accumulating pleural fluid, especially on the right side. A marked bleeding tendency was apparent at every hypodermic injection; the bleeding time was prolonged to 9 minutes; platelets appeared to be much reduced. By the use of intravenous sodium bicarbonate, the plasma alkalinity was increased to a normal level. Yet the patient recognized the fact that the dyspnea was not commensurately improved. He died on September 5, a year after the onset of symptoms.

Autopsy. Except for advanced infiltration of the lungs, there was a striking absence of tumor in the viscera, and the skeleton was shown to be the chief depository. The brain, liver, spleen, kidneys, heart and intestine were essentially normal. A large amount of tumor was found in the pelvis adjacent to the original lesion; it had infiltrated the adjoining musculature. The bulk of this tumor was necrotic, and there were many hemorrhages centrally in the larger nodules. The tissue was grayish and softened, with the appearance of brain tissue.

There were lesions arising from the ribs that projected into the parietal pleura on both sides, and the surface of the left diaphragm was covered with tumor nodules. The vertebras showed diffuse sarcomatous infiltration, especially advanced in the 12th dorsal vertebra. In the base of the skull, the left petrous bone and the sphenoid and left ethmoid sinuses contained tumor; the calvarium, on transillumination, showed spotty infiltration. No tumor could be found in the upper left humerus (the site of the earliest secondary deposit). The mediastinal and pelvic lymph nodes contained tumor. There was bloody pleural

fluid in both sides. The bony lesions were destructive; new bone was not present.

Microscopically, the lesions were typical of those of Ewing's sarcoma (Fig. 4).

Radiotherapeutic note. According to the roentgenologist (Dr. Richard Dresser), from the radiotherapeutic standpoint, several interesting observations were made in this case. Roentgen rays approaching in average wave length the gamma rays of radium were employed. Although huge amounts of radiation were given, the skin showed remarkably little reaction, and at no time was it necessary to halt therapy because of damage to the superficial structures. Although the patient was by no means free from roentgen sickness, the general untoward reaction to the superhard radiation was less than would have been anticipated from corresponding doses of 200-kilovolt roentgen rays. The clinical response to radiation was essentially the same as that observed in a number of other such cases: that is, a brief respite from symptoms with general improvement, only to be followed by metastatic manifestations and a progressively downhill course. Although at autopsy much tumor tissue was found at the site of the primary lesion, it is difficult to say how much of this was the original growth and how much metastatic disease. It is well known that the secondary deposits of any growth are prone to be less radiosensitive than the original neoplasm.

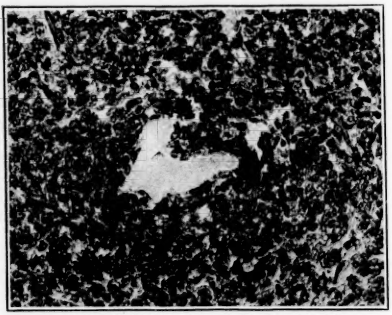

FIGURE 4. *Photograph of a Section of the Tumor.*

COMMENT

Mortality statistics. Ewing,[5] in 1921, singled out this neoplasm of bone as an entity because of its response to radiotherapy (radium). Its incidence is given as between 10 and 15 per cent of malignant tumors of bone.[6] Its pre-eminent malignancy[3] is attested by the published reviews of series of cases. In 1926, Connor[2] found 11 per cent "cures" in 54 cases (52 from the Registry of Bone Sarcoma and 2 from the Massachusetts General Hospital). In 1930, Copeland and Geschickter[7] reported that 86 of 99 patients had died, but that 13 were apparently well: 3 for four and a half to five and a half years, and 8 for three to five years. In 1939, Geschickter and Maseritz[8] gave a figure of 94 per cent fatalities in a group of 135 cases. Meyerding[4] has been able to demonstrate a patient who was well five years after biopsy and irradiation, and another who showed no recurrence fifteen years after curettage, irradiation, Coley's toxin and, finally, amputation. In 1938, Meyerding[9] also added to the literature a ten-year cure effected by means of Coley's toxin in addition to irradiation therapy, and an eleven-and-a-half-year cure by amputation followed by irradiation. Desjardins, Meyerding and Leddy[10] observed 6 patients of a series of 24 so treated who were alive two to twelve years after treatment by irradiation alone. On the other hand, W. B. Coley[11] stated, in 1935, that no five-year cures of Ewing's tumor of the long bones were effected by irradiation alone, in either his series of 50 patients or in the group of 100 cases in the Registry. He[12] had pointed out earlier that half the five-year cures in the Registry had had his toxin as part of the therapy. It is arresting to read that advanced and inoperable cases have thus been reclaimed: 12 of 22 inoperable patients (6 treated by toxins only, and 6 by toxins in addition to x-ray) have been well for five to seventeen years. In 1931, W. B. Coley[13] presented 6 cases apparently cured by toxin and radium therapy after extensive metastases. The case presented by Christian and Palmer[14] is an example of amazing therapeutic triumph, but the course was leisurely and not fulminating like that of the more fatal tumors. Simmons[15] has pointed out that the Registry contains no case of a cure of bone sarcoma by irradiation alone. In 47 cases of bone sarcoma at the Massachusetts General Hospital from 1920 to 1932, inclusive, he found 8 cases of Ewing's sarcoma, all of which were fatal; 4 had been treated by amputation and 4 by irradiation, and these had shown the regular but only temporary response. Both he and B. L. Coley[16] stated recently that they have not observed a single authenticated case of a five-year cure.

Therapeutic procedure. Simmons[15] believes that there is some hope if radical amputation can be carried out. Copeland and Geschickter[7] consider radical surgery combined with irradiation to offer most in therapy. Geschickter and Maseritz[8] approve biopsy, after a preceding roentgen therapeutic test, to be followed by surgery — resection of shaft, or amputation in the weight-bearing bones of the lower extremity. B. L. Coley[16] urges that biopsy be done before irradiation because of the distorting effect of roentgen rays on the cells, and the ensuing difficulty in microscopical diagnosis. W. B. Coley[11] agrees that amputation is not to be spared as a therapeutic necessity, and

has said that irradiation should be depended on only in the inoperable case. He urges biopsy, if the diagnosis cannot be made without it. Prolonged toxin therapy is advised, to be given adjuvantly in surgical intervention. Meyerding[9, 17] insists that early irradiation is the method of choice.

Prognosis. It was observed by Ewing[18] that the mortality is higher in younger patients. He estimated the duration of the disease to be from one to three years. Twelve months is given as the average duration of symptoms before the patient is seen. Copeland and Geschickter[7] state that the average duration of symptoms preoperatively in patients who live is twenty months, whereas in the fatal cases it is only six months. Thus, it is possible to predict the course by the time of development of severe symptoms. Simmons[15] has stated that the prognosis in bone sarcoma depends more on the degree of differentiation of tumor cells than on any other factor. A corollary conclusion is that, once metastases appear, the outlook is grave, regardless of the type of therapy.

Proper clinical attitude. It is well to remember that the discouraging statistics contain a considerable element of delayed diagnosis. Desjardins et al.[10] state that, in a group of 42 cases of endothelioma of bone, an accurate clinical diagnosis was made in only 9 cases. Other contributory reasons for the many failures might be found in poor roentgenography and inadequate irradiation. Even if it must be admitted that few of the tumors have been permanently controlled, it does appear that there was effectual intervention in the favorable cases. The striking radiosensitivity of Ewing's tumor seems to present prima-facie evidence for an eventual control by roentgenotherapy. Yet the strong suggestions of underlying constitutional nature, as well as the inflammatory character of the growth, enliven the hope for successful use of a perfected toxin. Connor's[2] exhortation may well be repeated after fifteen years: the disease "should not be looked upon as hopelessly fatal from the start. . . . A consistent and persistent attack . . . will frequently control it temporarily, and . . . in a number of cases permanently."

Conclusions

The clinical story in Ewing's sarcoma of bone reflects the appearance and progress of a recognizable pathologic entity, and is of decided importance in diagnosis and treatment, especially in cases in which the lesion is hidden or the process is histologically and roentgenographically obscure. The salient clinical characteristics are: insidious onset, regular alternation of episodes of pain and periods of comfort, and progressive intensification. The last is a feature of the component episode, as well as of the total course.

Early diagnosis is adjured because the tumor possesses unique radiosensitiveness, and treatment must be instituted prior to generalization of the disease.

The natural history of the tumor is of value in avoiding the common, erroneous diagnosis of osteomyelitis, which is strongly suggested by the inflammatory signs. Fever and leukocytosis during episodes may be striking.

On the other hand, technical signs of active disease may be so slightly suggestive that the physician departs from consideration of a morbid process and begins to suspect emotional difficulties.

Such an interpretation of events encourages delay in treatment. The patient's recognition of the recurrence of familiar pain should be given full credence.

The roentgenogram is not a dependable index of integrity of bone. Lesions undeniable from the clinical standpoint may remain unvisualized until an advanced stage.

Although the factor of hereditary predisposition to neoplasm is suggested by the incidence of embryoma of the testis in an uncle, there was in the case presented no indictable precipitating cause, such as specific trauma.

This case supports the idea that prognosis is chiefly dependent on the degree of malignancy. The fulminating character of the neoplasm in this patient was indicated by the rapid evolution and resolution of the disease. The growth-behavior of the tumor is the fundamental criterion in prognosis. To say that the early appearance of secondary lesions removes a patient from the group of those who may get well is simply to admit the primacy of this concept.

The effectiveness of irradiation was demonstrated in this case by prompt subsidence of symptoms and by reinstitution of apparent health for two and a half months. Since after this period, however, secondary neoplastic foci appeared, it must be concluded either that metastasis had already occurred before irradiation of the ilium or that dissemination proceeded afterward, from radioresistant cells in the parental tumor.

In spite of almost relentless irradiation in heavy dosage, evidences of insufficiency of the bone-marrow did not appear until the terminal days of cachexia. Even then, an abundant polymorphonuclear leukocytosis was possible.

The metastatic phenomenon of predilection for bone indicates a favoring milieu there, in contrast with visceral inhospitality.

In the case presented, it was striking that at the times of reactivation, and when new lesions were appearing, old sites of metastasis became painful again. Such manifestation of a general, coordinated development was corroborated in the cycle of variation in rate of blood sedimentation, which took place with regularity in spite of irradiation, toxin therapy and progressing anemia. Furthermore, the timing of cycles during the stage of generalization was apparently the same as that when the primary tumor was evolving. This maintenance of a basal rhythmicity throughout the whole active course points to a supervisory regulation of growth in the constellation of tumors, and reflects the interplay of neoplastic increment and systemic readjustment. One gains a larger, biologic concept of the disease if one considers the tumors, not as independent lesions, but as homologous neoplasms obeying an intermittent irresistible force.

5 Bay State Road

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MEDICAL PROGRESS

SYPHILIS

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DURING the past year, there have been so many publications of interest about syphilis that it is again difficult to select material for a progress report. It is of primary interest that the campaign to control syphilis continues unabated and should before long produce noticeable changes in the incidence of the disease. This is especially true in the larger cities, where there is already an apparent drop in syphilis in presumably representative samples of the population.[1] Heretofore, smaller cities and rural communities showed the lowest incidence of syphilis. This reversal seems to indicate that the work has been either less actively pursued in the smaller cities or less effectively promoted. The campaign also has produced numerous publications regarding the effort to prevent venereal disease among the nation's military forces.[2] Since many army camps are at some distance from towns and cities, the vendors of feminine diversion have taken to wheels. Evidently, prostitution has motorized more rapidly than the army. Regulations have been promulgated, and large restricted areas have been set aside in which trailers and roadside stands are not permitted around certain military posts.

Reprints of articles in this series are not available for distribution, but the articles will be published in book form. The current volume is *Medical Progress: Annual, 1940* (Springfield, Illinois: Charles C Thomas Company, 1941. $4.00).

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Public Health

The first item of note is the recent passage in Massachusetts of a premarital-examination statute. The Massachusetts law[3] differs from most in that there is no provision preventing marriage, regardless of the presence of disease. It is merely required that applicants be examined, and that both parties be informed of the presence of infectious disease and the possibility of transmitting it in marriage and pregnancy. Editorial comment[4] on this statute has been favorable. A similar law has been operating in Virginia for several years, with apparently satisfactory results.[5] It is hoped

that this measure will restrain those who should not marry and stimulate them to undergo treatment—perhaps more effectively than if marriage were made illegal. A survey of reports from twenty-six states having premarital laws[6] indicates an incidence of 1.3 per cent positive tests among 677,000 persons. This is lower than the rate for the population as a whole, and should have brought approximately 8800 people under observation. One difficult problem is reciprocity between states having these premarital laws. This matter has already been considered,[7] but the solution is probably somewhat in the future. In one state, a premarital law has apparently reduced congenital syphilis 50 per cent in four years.[5] Marriages were fewer at first, but have been steadily increasing. A particularly good study of the incidence of syphilis by Clarke and his associates[8] was extremely critical of the data previously utilized, and compiled statistics on more than four million people. Each report was reviewed according to rigid criteria, and many groups were discarded, the final analysis being based on about two million cases. The crude rate for the incidence of syphilis was 3.24 per cent on a nationwide basis. Figures for various population groups would cover wide variations. For example, the prevalence of syphilis among the first million selectees and volunteers was 4.52 per cent.[1] This is subject to some possible modification because follow-up studies had not been completed on all positive cases at the time this report was compiled. Statistics should be broken down to cover various sectional groups so that the greatest effort can be directed among the portions of the population that are most heavily infected.

Serologic Tests

Much effort has been expended on analyzing and improving serologic tests for syphilis. There has perhaps been more confusion in the mind of the profession regarding blood tests than on any other matter relating to this disease. The fourteenth supplement to *Venereal Disease Information*[9] is a monograph devoted to this problem. Every phase of serologic tests for syphilis and their interpretation is thoroughly covered. A review of this work is impossible here, but the supplement can be obtained from the United States Public Health Service for a pittance.

The increasing number of tests for syphilis has led Moore and Eagle[10] to suggest standardization of serologic reports. The more tests one can employ on a given specimen, the greater is the possibility of an accurate result. It is the interpretation of variant reports that is confusing, and the laboratory director should be the best qualified person to unify conflicting laboratory findings. Thus, these authors recommend that a single report of positive, negative or doubtful be returned from the laboratory, regardless of the type or number of tests employed. This composite report would simplify and clarify the utilization of laboratory data. No information of diagnostic significance would be withheld, since the results of all individual tests should be given on the back of the laboratory slip. A study of the specificity of serologic tests carried out on 40,545 college students of both sexes showed 62 cases (0.15 per cent) that were positive or doubtful,[11] and these data were confirmed by repeat tests. Half these cases failed to exhibit any evidence or history of syphilis. By correlation with the proved cases of syphilis, only 10 cases were considered to have possible false-positive reactions. This incidence (1:4000) of questionable false-positive results seems sufficiently small to justify, as a general public-health measure, the diagnosis of syphilis in clinically normal persons on the basis of repeated positive serologic tests, even in the absence of history or clinical evidence of syphilitic infection.

Moore and Eagle[12] have been investigating quantitative serologic tests for syphilis since 1928, and their report covers 1665 cases. It is essential that these tests be done in series by the same laboratory; otherwise, they are not comparable, and it is emphasized that a single quantitative test is practically useless. Therefore, such procedures are of little value as routine diagnostic measures, nor are they an expression of the severity or gravity of the infection. It has not yet been possible to determine accurately the prognostic value of serial quantitative tests for syphilis in the course of treatment.

It has been conclusively demonstrated that patients with infectious mononucleosis give a positive serologic reaction for syphilis that may persist as long as two months. Publications on this point have been quoted in previous progress reports. It is interesting to note a report of an epidemic of mononucleosis without clinical signs or symptoms.[13] Sixteen out of 108 convalescent rheumatic-fever patients developed mononucleosis during a six-month period. The first case was accidentally discovered during a routine leukocyte count. Blood Wassermann reactions were checked in only 5 cases and were negative in all. This report gives rise to interesting speculation: if infectious mononucleosis exists in an asymptomatic form and if such cases occasionally show positive blood tests, another obscure cause for false-positive serologic tests for syphilis exists. It is unfortunate

that only 5 cases were tested and that only the Wassermann test was employed.

Another episode has apparently been proved to provide false-positive serologic reaction for syphilis. Lynch and his associates[14] found that 43 (16 per cent) out of 263 patients exhibited positive tests for two to four months after vaccination for smallpox. The same phenomenon was encountered in a study of 20,000 serologic tests for syphilis among Navy personnel after vaccination.[15] Typhoid inoculations did not produce this effect on the serologic tests.

Transfusion Syphilis

The 1940 progress report[16] called attention to the successful use of arsphenaminized citrated blood in the prevention of transfusion syphilis. Further work has been carried out along this line by Eichenlaub and associates,[17] who suggest that 0.01 gm. of Mapharsen be added to the sodium citrate solution when blood is withdrawn from the donor. This recommendation is based on a study of 41 cases of transfusion syphilis in which 16 of the donors had syphilis that was not detectable by laboratory methods or physical examinations. The amount of Mapharsen suggested was found to be capable of sterilizing 500 cc. of blood known to contain *Treponema pallidum* (rabbit experiments). These authors believe that if the procedure is not accepted as routine, it should at least be used when there is not time to investigate the donor or when any doubt of the absence of syphilis exists. The increase in utilization of blood banks has given rise to another phase of transfusion syphilis. Studies by Turner and Diseker[18] and by Bloch[19] are encouraging. Experimental results with citrated blood to which a suspension of virulent *T. pallidum* was added indicate that the infectivity of the treponemes in citrated blood rarely persists for longer than three days at refrigerator temperature. Therefore, there is apparently a definite risk if blood has been preserved for less than seventy-two hours, but not thereafter unless the donor had early syphilis. It is probable that any blood stored for four days or longer cannot transmit syphilis.

Clinical Problems

Extragenital chancre. Wile and Holman[20] reviewed 841 cases of primary syphilis observed over a period of twenty-five years, among which were 68 cases (8.0 per cent) of extragenital chancre. In 39 cases (57.3 per cent), these occurred on the lip. In decreasing order of incidence were lesions on the tonsil, tongue, pharynx, female breast, forehead, chest and anus. Noteworthy cases and the circumstances surrounding them were described in detail. The failure of early diagnosis, particularly in unusual locations, was emphasized. Syphilis should always be considered in the face of any persistent lesion with regional lymphadenopathy that does not respond to ordinary therapy.

Secondary syphilis. Thomas and Goldstein[21] reported 23 cases of chronic syphilitic tonsillitis, 20 being misdiagnosed before coming to their clinic. The duration varied from two weeks to over three months, and all but one patient showed a secondary eruption. There is nothing characteristic about the appearance of these throats, but they must be differentiated from Vincent's infection and diphtheria. Routine serologic tests for syphilis and a careful examination for other signs established the diagnosis.

Transmissibility of syphilis. Pariser[22] studied the infectiousness of vaginal secretions and menstrual blood of 30 untreated syphilitic women by injecting these secretions into rabbits. Vaginal infectiousness was periodically recurrent rather than continuously present, and depended on the presence or absence of lesions. No estimate could be made of the frequency of cervical relapse or of its end point. One infectious relapse occurred six and a half years after the onset of the disease. Physiologic secretions were not infectious in the absence of open lesions.

Bone and joint syphilis. Buchman and Lieberman[23] reviewed 89,000 orthopedic cases observed over a period of ten years. Of these patients, 119 (0.13 per cent) had lesions of the bones or joints due to syphilis; 25 were congenital cases, of which 3 exhibited a negative blood reaction; 27 of 84 patients with acquired syphilis showed a negative reaction. The authors attributed this low incidence of bone and joint syphilis to the relative infrequency of lesions of orthopedic importance in the presence of syphilis.

Cardiovascular syphilis. Gelperin[24] reported an interesting analysis of 7683 autopsies in which 700 cases (9.1 per cent) with microscopic evidence of syphilitic aortitis were found, excluding developmental complications; he suggests that patients with late latent syphilis, without adequate treatment, be considered as having active syphilitic aortitis. Doubtless, there are dissenters to this opinion. Berk,[25] reporting a clinical and electrocardiographic study of cardiovascular syphilis, believes that the only safe method of diagnosing early syphilitic aortitis with coronary ostial stenosis is with a positive electrocardiogram after a positive exercise test. After the age of fifty, however, he regards this finding as more probably due to coronary sclerosis on a nonsyphilitic basis.

Stewart and Smith[26] found that the administration of potassium iodide causes changes in the electrocardiogram and cardiac rhythm that may be falsely attributed to coronary occlusion. These "toxic manifestations" disappeared after the drug was discontinued.

Congenital syphilis. Ingraham et al.[27] have published a comprehensive report on infantile congenital syphilis. It covers a five-year follow-up on 230 children of syphilitic mothers. Re-examination of 70 per cent of the survivors four or five years later revealed no congenital syphilis that had been missed by x-ray and serologic studies during infancy. The mortality among syphilitic infants was 33 per cent, as compared with 10 per cent in the nonsyphilitic group; over three times as many died without therapy as with it, even when inadequately treated. Ingraham believes that hyperpyrexia from intercurrent disease may enhance good results. He also reviews the recent advances in the serologic and roentgenologic diagnosis of infantile congenital syphilis and emphasizes close co-ordination in interpreting blood and roentgenographic changes. Considerable attention is given to titered serologic studies, and their great value in the early weeks of life is emphasized. Occasionally, a significant change in the titer may not occur until four to eight weeks after the child is born. Sarnat and his collaborators[28] described changes found in the unerupted permanent teeth by roentgenographic study of patients with congenital syphilis; disturbances in development occurred in the neonatal period and earliest infancy. These may be diagnostic when x-ray films of the long bones show nothing, since the teeth changes are permanent, whereas bone lesions are subject to resorption. This is a useful contribution, and one can readily agree with the postulation of the authors that x-ray examination of unerupted teeth should be carried out in conjunction with studies of the long bones. Koons and Kissane[29] studied 100 children with congenital syphilis and 335 others with cardiac disease. No syphilitic heart disease was found, and the authors concluded that syphilis can be practically disregarded as a cause of cardiac disease in children. This bears out a long-accepted corollary. The role of ariboflavinosis in interstitial keratitis has not been entirely clarified. Johnson and Eckardt[30] were unable to produce keratitis in syphilitic rabbits by placing them on a diet deficient in riboflavin. These authors believe that the corneal changes seen with the slit lamp in riboflavin deficiency are not typical of syphilitic keratitis.

Syphilis and pregnancy. Peckham[31] studied the effect of syphilis and its treatment on toxemia of pregnancy in 13,742 consecutive deliveries and found the incidence of toxemia somewhat lower in syphilitic than in nonsyphilitic patients. There was no correlation between the stages of syphilis and frequency of toxemia. The lowest incidence of toxemia was in syphilitic patients treated before, but not during, gestation, the amount of treatment employed being without significance. Half the patients receiving therapy during pregnancy had evidenced toxemia before antisyphilitic treatment was begun. It is obvious from this study that the various degrees of toxemia of pregnancy are entirely unrelated to both syphilis and its therapy.

Neurosyphilis. Bottema[32] had the unique opportunity of observing 1470 cases of syphilis in the Dutch Navy that were followed for thirty years. Careful records and very thorough checks on clinical and laboratory findings were available for the entire time. The patients were divided into four groups, as follows: untreated; those receiving mercury therapy only; those given small amounts of arsphenamine; and those receiving intensive arsphenamine therapy. A striking progressive decrease of morbidity in each group left no doubt regarding the value of even small amounts of therapy. This is interesting in view of the theory, maintained by some, that small amounts of the arsphenamines are conducive to the occurrence of neurosyphilis. Alpers and Lesko[33] call attention to the incidence of neurosyphilis with negative cerebrospinal-fluid examinations. Varying percentages of negative fluids are reported for the different types of neurosyphilis, the highest being 23 per cent in vascular neurosyphilis. In many cases of neurosyphilis of all types in which the laboratory reports are negative, clinical symptoms not only remain, but continue to progress. This is especially true of tabes dorsalis and vascular neurosyphilis. Alpers and Lesko conclude that these cases illustrate the tendency to emphasize too strongly the laboratory data to the exclusion of the clinical facts.

Syphilis and diabetes mellitus. McDaniel, Marks and Joslin[34] reviewed 15,095 patients with diabetes and found 258 cases (1.7 per cent) of syphilis, 87 per cent of which were latent. In their study, these authors failed to find any "syphilitic diabetes." Not a single case of cure of diabetes was brought about by optimum antisyphilitic therapy. Williams[35] observed that 23 of 1000 patients with severe diabetes and low carbohydrate-tolerance tests, for whom large doses of insulin were required and whose metabolism was difficult to adjust, frequently showed "subpositive" serologic tests for syphilis. Treatment was found to serve

no useful purpose and was often upsetting. He concluded that there was no causal relation between syphilis and diabetes.

Syphilis and tuberculosis. The management of syphilis in the tuberculous patient has been discussed by Murphy and Bromberg.[36] Approximately 9 per cent of an adult tuberculous group was found to be syphilitic, which is somewhat higher than the usual figure for this type of patient. These authors confirm the existing belief that syphilis does not materially alter the prognosis of tuberculosis, or vice versa. It was indicated that tuberculous toxemia may occasionally contribute to temporary false-positive serologic reactions for syphilis. In hopelessly advanced tuberculosis, any other treatment would be superfluous. Cardiovascular and cerebrospinal syphilis may be debilitating and even fatal in a patient with advanced tuberculosis who otherwise might maintain a satisfactory equilibrium. It is interesting to note a paper by Fujimori[37] concerning the influence of syphilis on the resisting power of a living organism: it was found that experimental syphilitic infection decreased resistance and rendered the animals more susceptible to other infections.

Therapy

Early syphilis. An outstanding study on the treatment of syphilis has been that of Padget.[38] A very difficult problem in evaluating treatment, especially new drugs and new methods, has been the lack of necessary long-term statistics to show the end results. In a disease that is so chronic, insidious and prone to relapse, the first results of treatment are of value only for prognosis of the immediate future. It is a long-term follow-up of therapeutic results in early syphilis by modern methods that Padget has been able to present for the first time. Five hundred and fifty-one patients were completely re-examined five or more years after the termination of treatment. "Cure," as defined by Padget, consisted either in reinfection or in freedom from symptoms, negative physical examination, repeatedly negative serologic reactions for syphilis, normal cerebrospinal fluid and normal roentgenograms of the cardiovascular stripe. In the light of these criteria, only slightly less than two thirds of these cases achieved cure, the mean period of observation being about eleven years. Two hundred and sixty-eight patients were examined after five years had elapsed and, again, at the end of ten years. No case showed a less satisfactory result at the end of ten years than after only five years. This is perhaps one of the most significant features of the study and indicates that, in a patient with early syphilis adequately treated by modern methods who maintains such a "cure" for five years, the possibility of further trouble is extremely remote. Padget's other findings in the study of this group are confirmative of the accepted opinions regarding race, sex, stage of disease at onset of treatment and so forth. The final results were found to be dependent on both the type and the amount of treatment, the alternating continuous system of therapy being clearly superior to other programs. It was emphasized that the continuity must be absolute, especially in the first six to twelve months; 90.4 per cent of patients who had unbroken treatment for the first year were cured, which was the highest figure. The worst results were obtained in the seropositive primary cases, in only 55 per cent of which cure was achieved, neurosyphilis being more than twice as common in this group as any other. Padget's paper is of considerable value in that it has at last provided the absolute proof of several cardinal principles in the treatment of syphilis as emphasized by the modern school of syphilologists. In the light of this, a review by Cole[39] is very timely: it gives an excellent survey of the problems of the general practitioner in the treatment of syphilis and provides cogent answers.

Bismuth compounds. It is only in approximately the last twenty years that bismuth has been used in the treatment of syphilis. Walsh and Becker,[40] who have reviewed the status of this drug, emphasize the fact that it cannot be relied on as the sole antisyphilitic drug to the exclusion of the arsphenamines. According to these authors, the present consensus seems to be that bismuth salicylate in oil is the most suitable from the standpoint of therapeutic effect, low toxicity and prolonged action. A plan of treatment that includes the advocation of a much larger number of bismuth injections than is usually employed, especially in neurosyphilis, is outlined, but their report indicates slightly better results. Considerable experimental work with oral bismuth administration in animals suggests its effectiveness in early syphilis. A recent paper by Hanzlik and Van Winkle[41] is confirmatory. Lambert,[42] however, shows that oral bismuth is not suitable for the treatment of early syphilis in the human organism. Six seronegative cases of primary syphilis and 2 in the secondary stage were treated with Sobisminol, six to nine capsules daily, for a period of nearly four months each. Five of the seronegative primary cases developed a positive blood Wassermann, and 4 of these 5 developed a clinical secondary stage despite the above therapy. The implication is obvious.

Arsenical therapy. Stokes and Beerman[43] reviewed the use of trivalent arsenicals in syphilis

from the standpoint of recent advances, comparisons and evaluations. It is a very comprehensive study including a discussion of nine different drugs, methods of testing, new technics, the "five-day plan," the laboratory value of drugs compared with their usefulness to the practicing physician, to the expert and to the demands of the public-health officer. This paper is certainly worth reading in the full text by those who aspire to any degree of familiarity with these drugs. It is brought out that although Mapharsen is apparently the best drug in many respects, there is as yet insufficient study of infectious relapse following its use. The value of Bismarsen in childhood and in cardiovascular syphilis is stressed. In the end, however, the authors consider arsphenamine the most effective drug in everything except central-nervous-system syphilis.

Interstitial keratitis. Klauder and Vandoren[44] presented an excellent report on 532 cases of interstitial keratitis, with particular reference to treatment. All the cases, which were pooled from five institutions, were treated or observed for at least one year. The median age at onset was twelve years in females and thirteen years in males. The two commonest stigmas present in conjunction with the keratitis were Hutchinsonian teeth (40 per cent) and bone and joint lesions (35 per cent). It was interesting that 42 per cent of the cases were bilateral within a month of onset, and that 71 per cent became bilateral within two years. The figure then crept very slowly to 79 per cent at the end of ten years. The fact that hyperpyrexia (malaria or hyperthermia) should be instituted at once was emphasized. Immediately following this, at least twenty intravenous arsenical injections were advocated, in conjunction with bismuth. This combined treatment should be started between the fever treatments if malaria therapy is not used, and the first few injections of bismuth should be the water-soluble form. In the prevention of relapse, chemotherapy combined with fever treatments was clearly superior — less than 0.5 per cent as compared with 13 to 18 per cent by other methods. It is imperative that treatment be continuous during the active stage to achieve the best percentage of good results, yet in the end there was 10 to 12 per cent of blindness from all methods. Apparently a tenth of the patients will be blind regardless of treatment. It was brought out that treatment during the inactive stage was of limited value in improving the final vision, but it should be noted that Klauder and Vandoren do not mean treatment to be dispensed with, since the patient still has congenital syphilis. It was stated that iodides have an unfavorable influence on the final vision. In considering this paper, one should remember that all the work was done before the introduction of riboflavin. Cole[39] is now of the opinion that the combination of hyperpyrexia and large doses of riboflavin (vitamin B_2) is the method of choice in the treatment of interstitial keratitis. He believes that other treatment should be withheld until the fever is terminated.

Central-nervous-system syphilis. Spiegel, Leifer and Sarason[45] have reported on the use of a new drug, Aldarsone, in neurosyphilis. This study extends over a period of five years and covers 133 patients with various types of the disease. Many of the patients received courses of bismuth injections concurrently, and fever therapy was given when indicated. The drug was well tolerated by the majority of patients, and no very serious reaction occurred. The results seem to indicate that Aldarsone is effective in neurosyphilis, and that optic atrophy is apparently no contraindication to the employment of this drug. This is encouraging, and if further work and longer periods of observation bear out these results, it will be a definite step in advance. Epstein and Solomon[46] stated that there are three factors relating to the mechanism of artificial fever: destruction of treponemes by elevation of body temperature, biologic response to nonspecific foreign protein, and alterations produced in the brain parenchyma by the malarial organism. If one grants these three factors, one is still somewhat at a loss to assess their relative importance. Epstein and Solomon have considered fever therapy in general and its effect on the various forms of neurosyphilis. The main point is their plea for the use of fever therapy in the treatment of asymptomatic neurosyphilis, since "accumulated clinical evidence indicates that fever therapy adequately prevents clinical neurosyphilis." This statement is made with the reservation that fever therapy is not so effective in juvenile paresis. A five-year comparison of artificial fever and therapeutic malaria was reported by Ewalt and Ebaugh.[47] Two hundred and thirty-two cases were equally divided without selection. All the malaria cases and 66 per cent of the artificial-fever patients were followed for five years (or until death). Remission or improvement occurred in 69 per cent of the fever group and in 58 per cent of the malaria group. It must be stated that the former underwent consistently higher temperatures. The authors raise the possibility that these higher temperatures are responsible for better results and suggest that the better physical condition of the fever patients at the end of treatment may be significant. Malarial therapy and artificial fever are not available in many institutions, however,

and several other methods of producing fever have been suggested. Kulchar and Card[48] report the use of typhoid "H antigen" vaccine, which eliminates the objectionable features of the old vaccine. One hundred and eighteen cases of various types of neurosyphilis were treated, and 94 were followed for periods of four to forty-six months. Most of these patients had previously had some chemotherapy. The symptomatic and serologic improvement compared favorably with the results of other forms of fever treatment. Kulchar and Card believe that the present method has a number of advantages in that fever can be produced, carefully controlled, and terminated as desired. It is stated that the relatively slight amount of constitutional reaction accompanying the fever makes it applicable with safety to many patients unable to receive other forms of fever treatment.

Massive-dose therapy. Reference has been made to this subject in previous progress reports, with emphasis on the fact that, although promising, the procedure must continue to be an experimental method for some time and should be used only in hospitalized cases under close observation, limited to cases of early syphilis, and employed only in well-equipped universities and syphilis centers. This opinion is echoed by Shaffer,[49] who calls attention to the fact that the method is now being tried in eight states under the supervision of the United States Public Health Service.[50] The instigators[51] of this procedure have continued its use with the substitution of Mapharsen for neoarsphenamine. Three hundred and eighty-two cases have been treated in all (neoarsphenamine and Mapharsen). There were significantly fewer reactions in the Mapharsen series. Including 15 re-treated cases, satisfactory results were attained in all respects in 88 per cent of the patients. There was 1 death, and 1 case showed a positive cerebrospinal fluid. There were 5 per cent of irrevocable failures, but this figure might have been reduced if re-treatment had been attempted throughout. A committee representing the original group and the United States Public Health Service[52] evaluated all available data of the work so far accomplished. It includes thirteen large hospital clinics in nine cities. All the work reported was done with Mapharsen, and nearly all the serologic study was carried out in one of two laboratories. Nine hundred and sixty-eight cases of early syphilis were treated. Both sexes were included, but no pregnant women were treated. The results were satisfactory in 85 per cent of the cases. Toxicologic manifestations were comparatively mild. Adding these to all cases reported in the literature from all sources, there have been 5 deaths (0.3 per cent) in 1600 patients. Apparently, the continuance of this study in well-organized centers is warranted. In the discussion of this paper, several authorities warned against release of the technic for general use. Cole[53] advocated conservatism and stated that he knew of several as yet unreported deaths. In his opinion, this treatment is still very much in the experimental phase. Elliott,[52] in closing the discussion, stated that some similar form of therapy may evolve to provide better results (and, it is hoped, fewer untoward results) than the treatment schedule in use at present. A modification of the massive-therapy program has already been reported by Schoch and Alexander,[54] who employed a multiple-dose, syringe-technic treatment schedule that utilizes injections twice a day. The series is small and the time of study is short, but all things must have a beginning, and Schoch is possibly on the right track.

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CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT

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CASE 28031

PRESENTATION OF CASE

A thirty-nine-year-old linotype operator was admitted to the hospital because of disorientation and various motor weaknesses following a complicated illness.

He was in good health until seven months before entry, when he had a "cold," associated with generalized aches and pains. This was followed by a brief spell of intense pain in the left lower quadrant of the abdomen, with radiation to the lumbar region. There were no associated urinary symptoms. The temperature was not noted. At the same time, there was gradual onset of constipation; this was significant because the patient had always had very regular bowels. After a month, he had another "cold," accompanied by generalized malaise and pain in the left lower quadrant, radiating to the lower left side and back. His physician, who reported a urinalysis as negative, diagnosed "kidney stone" and gave no treatment. In the next two or three months, the patient noted increasing nervousness and restlessness, particularly at night. He had to stop work because of intense, persistent pain in the back. He lost appetite and began to lose weight, dropping about 50 pounds in the period before entry. Two months before admission here, he entered a New York City hospital, where he was told that he had pus in the urine and, following cystoscopy, that "an abscess of the left kidney was drained." After the cystoscopy, he passed clots of blood in the urine. The bladder was washed out several times. After the patient left the other hospital, the pain in the back still persisted. He felt "warm" on several occasions; however, it is not known whether he had actual fever. At about this time, he became quite "nervous and jittery." A local physician gave him some sort of sedation, as well as light and diathermy treatment to the back, and a calcium preparation intravenously. About four weeks before entry, vision became hazy, and it was noted that there was occasional lateral deviation of the right eye. The patient began to complain of pain in both ears and of throbbing, generalized headaches. He became increasingly slow in his reactions, and seemed somewhat dazed, although rational. The left leg appeared to drag slightly when he walked. It is not known whether the leg was weak or whether he simply favored the leg because of pain in the left side of the back. Three weeks before entry, he motored some two hundred miles to Boston, thinking that the change in surroundings might benefit his nervousness. A few days after he arrived in Boston, a physician who was called because of excruciating back pain told the family that the liver was enlarged and the blood pressure normal. At night, twelve days before entry, the patient was suddenly found to be breathing stertorously. The mouth was pulled to the right side, there was paralysis of the left arm, and he could not speak. The next day, he was taken to another physician, who found that the left arm and left side of the face were paralyzed, and that the patient was unable to speak clearly. The blood pressure was 170 systolic, 90 diastolic. The patient then entered another hospital. After several days, there was some improvement in speech, but he remained disorientated. A lumbar puncture at this time showed that the pressure, cell count and protein were within normal limits; the Wassermann and gold-sol reactions were negative. A roentgenogram of the skull was negative. Three days before entry here, neurologic examination showed the patient to be disorientated, with a left central facial paralysis, left-sided weakness of the tongue, paralysis of the left vocal cord, weakness of the right arm and leg, and a questionable right Babinski plantar response. He was transferred to another hospital, with a diagnosis of thrombosis of the posterior inferior cerebellar artery. On arrival at that hospital, a small amount of bleeding from an old perforation of the left eardrum was noted. Physical examination was negative, except for the findings of a moderately soft, movable lymph node, measuring about 3 by 1.5 cm. in the right axilla, and a sharp, irregular, palpable liver margin. The blood pressure was 194 systolic, 104 diastolic. The temperature was 98°F. Neurologic examination was essentially as noted in the other outside hospital, with the addition of a possible right hemianopsia. Examination of the blood showed a red-cell count of 4,620,000 with 81 per cent hemoglobin, and a white-cell count of 18,450 with 68 per cent polymorphonuclears and 16 per cent band forms. The nonprotein nitrogen was 38 mg. and the serum bromide 6 mg. per 100 cc. The sedimentation rate was 32 mm. in two hours. A spinal tap gave clear fluid under an initial pressure of 120 mm. of water. There was good response to compression of the right jugular vein, but no response to

compression of the left. The fluid showed one polymorphonuclear and four red cells per cubic millimeter. The protein was 34 mg. per 100 cc. The Pandy, gold-sol, Hinton and Wassermann reactions were negative. Roentgenograms of the lumbar spine and of the skull, including special mastoid films, were all negative. Two days later, the temperature was 100.8°F. rectally and appeared to be rising. The patient was transferred to this hospital for possible surgical intervention.

The family and the remote past histories were irrelevant, except that the patient had had "ear trouble" in infancy, and had had chronic drainage from his left ear on many occasions in childhood and in later life.

On admission to the hospital, the patient was somewhat emaciated and delirious; he thrashed about in bed and talked incoherently. There were several, apparently self-inflicted, abrasions on the left foot, and the nail of the right great toe appeared recently avulsed. There were forced movements of the eyes to both sides, more especially to the left. There was suggestive left facial paralysis. The right arm and leg were less active than the left, but were no longer paralyzed. The reflexes were essentially normal. The fundi did not seem abnormal. The heart was not enlarged, and the sounds were of good quality, without murmurs. The aortic second sound was louder than the pulmonic second sound. The liver edge was sharp and firm, one fingerbreadth below the costal margin.

The temperature was 101.5°F., the pulse 132, and the respirations 20. The blood pressure was 175 systolic, 85 diastolic.

Examination of the blood showed a red-cell count of 4,450,000 with 80 per cent hemoglobin, and a white-cell count of 22,750 with 82 per cent polymorphonuclears. The nonprotein nitrogen was 24 mg., the serum albumin 5.4 gm. and the serum globulin 2.1 gm. per 100 cc. The carbon dioxide combining power was 27 vol. per cent, and the chlorides 95.3 milliequiv. per liter. The bromide level was 0.

On the second hospital day, a few brownish petechial spots were noted on the skin of the abdomen. These had not been present when the patient was examined in the outside hospital from which he had been last transferred. The questionable left facial paralysis had cleared. Paralysis of the right arm gradually appeared. The plantar responses were equivocal. On the third hospital day, the temperature rose sharply to 106°F. The patient became quite cyanotic and breathed with apparent difficulty. Dullness was noted in the right infraclavicular region, with palpable rhonchi. There were scattered loud bronchial breath sounds and coarse and fine rales. A blood culture was taken, and sulfadiazine was started. Death supervened.

Differential Diagnosis

Dr. William Dock*: The occupation was probably not related to the rest of the story. I do not know what illnesses the operators of linotype machines have. On admission, the patient was disorientated, and I dare say his friends gave the complaint, which turns out to have been incorrect, for hazy vision a month earlier means that motor weakness for more than twelve days concluded an illness of seven months. He had a "cold," but we do not know what that means. The intense pain in the left lower quadrant may have been due to a renal stone, or to a diverticulitis. About this time, the patient was constipated; that does not mean anything localized in the large bowel, for with any sort of illness, episodes of constipation and anorexia are likely to occur. He had another "cold,"—I take it to be a febrile illness each time,—with chilly sensations and aching. Nothing is said about sneezing and running nose, and probably it was not an upper respiratory infection or cold in the ordinary sense.

The pain recurred and again was severe, and from this point on his personality went to pieces, with nervousness and restlessness, and he stopped work because of intense pain in the back. He lost appetite and 50 pounds of weight in the following month. The pain may have been renal colic; it may have been due to retroperitoneal tumor, involving the nerve roots, but remission in such cases is rare. It may have been due to disease in the vascular bed behind the peritoneum, a mycotic aneurysm or some other vascular lesion. I remember one case of brucellosis in which the presenting complaint was severe backache, which was due to mycotic aneurysm.

Now the story becomes murky. After cystoscopy, the patient passed blood clots in the urine. The examiners may have opened up a perinephritic abscess with the urethral catheter, and may actually have encountered an abscess in one of the pyramids and removed pus, but that sounds improbable. After that, there was some washing out of the bladder, but the pain in the back was unaffected. I do not believe, then, that the pain in the back was related to the alleged kidney abscess.

The personality became worse and worse, and the patient was hard to live with. When put on

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sedative treatment and intravenous therapy, he developed motor weakness for the first time: the vision became hazy, and he had lateral deviation of the right eye. I assume that he had diplopia and wonder if he had intracranial disease — either a vascular lesion, tumor or abscess.

The patient had severe pain in both ears and headache, so that we think more of tumor than of vascular disease. He became slow in his reactions, was somewhat dazed, and had trouble with the left leg. The deviation of the right eye makes us think of a left-sided lesion in the temporal region, whereas the trouble in the left leg should have come from a lesion on the other side.

Even the trip to Boston does not seem to have relieved the symptoms. The pain grew worse, the liver was found to be enlarged, and the blood pressure was normal at this time. The liver makes us think of tumor, with metastases. The patient was found with stertorous breathing, and had palsy on the left side, including the face and the left arm. The blood pressure was higher — the blood pressure may be elevated by intracranial tumor or intracranial disease acting as tumor. Soon, the patient seemed better, but was still disorientated. Lumbar puncture was negative.

Now we get into more trouble. There was left facial paralysis, with weakness of the right arm and leg, so that we must put the lesion below the tentorium to give a crossed palsy.

The patient entered this hospital, where he remained, and we have a series of examinations — all done by the same people, apparently. Here for the first time is noted evidence of an old otitis media, which makes us think more of abscess than of tumor. A movable lymph node in the right axilla was found; this may or may not have had anything to do with the case. At this time, the liver was sharp and irregular. If it was irregular, the patient must have had cirrhosis or tumor, but the observation may not have been correct. The blood pressure was still high, which makes us think of vascular disease. The sudden onset of hypertension with this sort of story is characteristic of diseases like periarteritis nodosa. But, so far, there is nothing else to go with it. The temperature was only 98°F. There was a possible right hemianopsia. How one can tell about that with any degree of accuracy in a disorientated patient, I do not know. Perhaps, on that day, he was not so disorientated. He had rather marked leukocytosis, with normal blood nonprotein nitrogen, and his troubles were not due to bromidism, with only 6 mg. per 100 cc. in the blood, which is very low. These neurologic findings certainly cannot be accounted for by sedation. The high leukocytosis and the sedimentation rate suggest tumor, with much necrosis or infectious disease, such as abscess or periarteritis.

We come to the most striking thing in the history, for, if correct, it gives definite localization of the lesion. There was good response to compression of the right jugular vein but no response on the left. If that observation is correct, we can build up a whole diagnosis on it. However, it may be a historical landmark; he might have had lateral-sinus thrombosis early in life and been left with this. On the other hand, it may explain the whole business. The two bouts of "cold" might have been exacerbations of petrositis, with a jugular thrombophlebitis, followed by some sort of embolic lesion occupying the temporal fossa on the left side. If the patient had petrositis, he apparently had no meningitis with it. The spinal-fluid protein content was low, and the roentgenograms, including the special mastoid films, were negative. If that rules out petrositis as well as mastoid disease, I do not know what to do with the old otitis media and apparent obstruction of the jugular vein on the same side.

At last, the temperature began to rise. If the patient had periarteritis all this time, I think he should have had fever on previous occasions; but that is not necessarily so. The ear trouble is stated to date back to infancy, and he had had trouble of that sort off and on all his life. It may be that he had petrositis and extension of inflammation to the jugular bulb without any marked bone destruction, but it is not a helpful thing that the one syndrome that would be diagnostic — the Gradenigo syndrome (facial pain and sixth-nerve palsy due to petrositis) — is missing. The only sign of eye trouble was presumably the third nerve on the opposite side — nothing very helpful there.

When he came into the hospital, the patient still had left facial paralysis, and the right arm and leg were paralyzed and weak. The fundi were not abnormal, which certainly means that there was no malignant hypertension. It does not rule out periarteritis nodosa, however. The heart was not enlarged. There were no abnormal findings except that the liver edge was sharp and firm one fingerbreadth below the costal margin. If he had had chronic suppurative disease for years, he might have amyloid.

We then have some assorted findings: the temperature was higher, the blood pressure was still high, and the patient had marked leukocytosis but a normal blood nitrogen. The carbon dioxide combining power and the chloride values were a little on the low side, which will not help our diagnosis, and there was no bromide in the blood.

What astonishes me is that on this man, who had intracranial complications of some sort, no

chest plate was taken. The first thing we think of with a man with something in his head is to rule out bronchiogenic carcinoma.

DR. GEORGE W. HOLMES: We have a chest plate, which does not seem to have been reported. The interesting thing is this increase in the supracardiac shadow. The shadow has a very sharply defined margin and apparently extends under the clavicle, but I do not believe it reaches the apex. It seems to me that there is a lesion extending from the sternal notch to the region of the lung root. There is no evidence of disease of any kind in the lungs.

DR. DOCK: Do you think it could be a sulcus tumor?

DR. HOLMES: It could be, but I doubt it; there is not enough in the apex. It apparently does not extend into the pleura. It may extend across the mediastinum. It has the somewhat caplike shadow that one sometimes sees in certain tumors of the mediastinum. There is no enlargement of the heart shadow, and the heart looks perfectly normal in shape. The aortic knob is probably normal, and there is no erosion of the ribs, so that I do not believe that there is congenital anomaly of the heart or great vessels. So far as I can tell from this plate, which did not have quite enough exposure, there is no compression of the trachea or of the bronchi. A mass of lymph nodes in that region might look like this, but the shadow is smooth on the outside border, not lobular as a shadow due to glands would be. In addition, there is a high diaphragm on the right side, and the liver appears large.

We have pretty good evidence that the petrous tip is normal — no tumor in the internal auditory canal, and a normal mastoid region. It is rather unusual to have disease of the petrous tips without disease of the mastoid process. All the evidence we have in the skull is quite convincingly negative.

DR. DOCK: One other thing surprises me: we have all these milliequivalent levels in the blood, but there is no report of urine examination. The only reason I am interested in the urine at the moment is that if the patient had periarteritis or if the liver enlargement were due to amyloid, he might have had protein in the urine. I do not know what to do with the shadow in the mediastinum. I am sorry I asked for that chest plate.

DR. CHARLES DERRICK: The urine was not recorded because the patient was incontinent.

DR. DOCK: Then we shall not know about that. Perhaps it is not important.

When we talk about diseases that begin in the lower quadrants, causing pain and enlarged livers, mediastinal shadows and intracranial lesions, we think among other things of a tumor beginning in the testis. I should like to know whether this patient had testes in the scrotum. He had been to a urologist and five physicians — I suppose that is known.

DR. TRACY B. MALLORY: The testes were in normal position.

DR. DOCK: Tumor beginning in an undescended testis sometimes gives pain in the belly, frequently metastasizes to the brain, and there causes very rapid changes of psyche and motor signs, not lasting over months, but a few days as innumerable intracranial metastases begin to go to pieces; but here there is no evidence of that type of tumor.

We come back to this man, who was rapidly deteriorating mentally, who had had numerous other signs of cerebral involvement, most of which cleared up, but whose paralysis of the right arm proved lasting and who died with a high temperature, 106°F. It seems high for any sort of sepsis and suggests that the intracranial lesion might have encroached on the hypothalamic region. My guess in this case, before knowing about the chest x-ray films, was based on the assumption that he had some disease of the left jugular vein. If we accept that (and I must admit that it is a gamble), the case was one of chronic otitis media, without much damage in the mastoid or petrous bone, but with extension of inflammatory disease to the jugular bulb and, finally, brain abscess. The lesion in the belly that caused the pain, whatever it should turn out to be, and these things in the brain may all be hematogenous metastases or suppuration due to organisms of very low virulence that had entered from the otitis media. Thus, I should guess chronic brain abscess, presumably in the temporal lobe, which seems the most likely region for this process. I do not know whether to put it on the right or left, but because the patient had more disease on the left we might put it there. He may have had terminal septicemia or meningitis.

But the chest x-ray film shows the liver to be so enlarged that it makes us think of tumor, and in the end all this nicely built-up story will go to pieces and we shall find that tumor, with a good deal of necrosis, caused the trouble. This would explain the shadow in the mediastinum: that is, tumor in the mediastinum, tumor in the liver and retroperitoneal tissues and intracranial metastases. I do not know how else to account for the enlarged liver. It seems incredible that the patient would have so many abscesses in the liver as the result of septicemia, and I am therefore hesitant

to account for the huge liver on that basis. The mediastinal shadow could also be accounted for by sepsis. Perhaps he also had a suppurative lesion along the vertebras in the mediastinum.

Just to be consistent and to stick to the observation concerning the left jugular vein, I make my guess that that is where the trouble started, but admit that the whole thing may turn out to have been due to a neoplasm.

Dr. Jost Michelsen: With brain abscess, how do you explain the cerebrospinal findings — the low pressure, the low protein and so forth?

Dr. Dock: The spinal fluid could be quite normal if the abscess were deeply placed in the brain. It seems to have been well walled off. Furthermore, a temporal-lobe abscess may have quite normal spinal fluid.

Dr. Michelsen: In the acute stage?

Dr. Dock: Have we evidence that it was acute? The patient had fever only at the end. These varying palsies suggest an abscess, which does not actually destroy anything but from time to time causes disturbances that may be associated with edema or something of that sort. That is a long chance, but this is a puzzling case.

Dr. James B. Ayer: I know the case, but I think you put too much stress on the left jugular compression.

Dr. Dock: So do I, after seeing the x-ray film of the chest.

Dr. Ayer: That may be normal. I think it was too bad it was in there.

Dr. Dock: I think it was good, because it gave me a point to build on.

Dr. G. Colket Caner: One of the striking points was the loss of 50 pounds early in the illness before any fever was reported; this seems to suggest neoplasm, much more than an infectious process, but I should not know where it started.

Dr. Dock: Weight loss may be marked with intracranial disease and with change of personality. One of the problems, if you try to explain this on the basis of neoplastic disease, is that the cerebral symptoms came and went. I should expect cerebral metastases to give progressive symptoms rather than transient ones.

Dr. Ayer: Not infrequently, metastases give changing symptoms.

Dr. Wyman Richardson: May I ask if the shadow in the mediastinum looks like the thyroid gland?

Dr. Holmes: It could be.

Dr. Richardson: Might not a tumor originating in the thyroid gland metastasize to bone, explaining backache, and later metastasize to the brain?

Dr. Dock: X-ray films of the spine were negative. With thyroid metastases to the spine, I think that one would pick them up three months after the pain started.

Dr. Holmes: I agree.

Clinical Diagnoses

Brain abscess?
Right-upper-lobe pneumonia.

Dr. Dock's Diagnoses

Chronic otitis media.
Jugular thrombophlebitis.
Metastatic abscesses, paravertebral and cerebral.

Anatomical Diagnoses

Carcinoma of the tail of the pancreas, with metastases to regional nodes, liver, lungs and pleura.
Endocarditis, probably marantic: aortic valve.
Multiple emboli, with secondary infarction, to brain, spleen and kidneys.
Emboli in portal vein.
Infarction, partial, of liver.
Perforation of left eardrum.

Pathological Discussion

Dr. Mallory: At post-mortem examination, we found an enormous liver, full of metastases. The next finding was a large mass, which completely filled the lesser peritoneal cavity and evidently arose from the tail of the pancreas and had secondarily involved the stomach and the colon. There were pulmonary metastases, and the shadow in the x-ray film arose from lymph nodes in the neighborhood of the trachea. When we opened the heart, we found an acute endocarditis of the mitral valve, apparently of the vegetative type. The brain showed embolic areas of infarction, but no tumor metastases. The endocarditis remains a problem. Grossly, it was suggestive of acute bacterial endocarditis. Blood cultures taken the day before death and at autopsy, however, were sterile. Attempts to culture the vegetations themselves provided us with a healthy growth of nonhemolytic streptococci, colon bacilli and *Bacillus subtilis*. One can take one's choice or discard them all. The sections of the heart valve showed no bacteria whatever, and practically no inflammatory reaction. It seemed to be a perfectly pure thrombotic vegetation, with no inflammatory reaction, and no fibrosis or organization at its base. A further complication in the interpretation was provided by finding one really good Aschoff nodule in the myocardium, so that what kind of endocarditis this was, I do not know. We have

no proof that it was bacterial. It does not in itself look rheumatic, but the Aschoff body suggests that etiology. Moreover, I do not like the idea of rheumatic vegetations that throw off multiple emboli. Whether there is such a thing as marantic endocarditis, I have never been certain. This case may be so classified if one believes it to exist. At all events, it is by no means rare for patients dying with metastatic neoplasm to develop a terminal endocarditis. It is comparatively uncommon for this to produce multiple infarcts of significant size. There were infarcts in both spleen and kidney, quite fresh ones. There was no evidence of old abscess or stone in the kidney.

DR. DOCK: Were the lateral sinuses and the jugular vein all right?

DR. MALLORY: Yes; there was only a perforation in the left eardrum, and no mastoiditis.

Finally, a most unusual condition, which probably played no part in the symptomatology, was found in the portal circulation. A thrombus had formed in the splenic vein, where it was involved by the tumor of the pancreas. From this, fragments had broken off and had been swept as emboli into the portal circulation, where they were found in the intrahepatic portal radicles. Partial or incomplete infarction of many focal areas in the liver had resulted, although the hepatic arteries had, of course, prevented complete infarction.

CASE 28032

PRESENTATION OF CASE

A sixty-three-year-old housewife was admitted complaining of shortness of breath.

For sixteen years, she had had diabetes, which was controlled by diet in addition to 10 units of insulin daily. The insulin therapy, however, was stopped, one year before entry, on the advice of her physician. Three months before admission, while the patient was pumping water, a sudden, severe, oppressive crushing pain occurred beneath the lower sternum and radiated straight through to the back and down the inner aspects of both arms as far as the elbows. She became anxious, extremely short of breath and covered with perspiration, and the heart beat rapidly. Rest gave no relief. The patient did not mention the pain to her family, but went in to supper, after which the pain became worse. Nausea and vomiting developed, and she called her physician, who put her to bed. The pain, however, remained unchanged for two days, after which it disappeared. The patient remained in bed for two weeks, but was afterward dyspneic on slight exertion. Two weeks before admission, she became orthopneic, at first being able to sleep on two pillows, then unable to sleep except when she sat almost straight up in a chair. During the night, she had several attacks of waking with a sense of suffocation and gasping for breath for about ten minutes. Four days after the appearance of orthopnea, the ankles began to swell, the edema gradually extending to the knees.

For many years, the patient had had brief attacks of precordial pain frequently radiating down the arms; there was no history of rheumatic fever, hypertension or weight loss. For several years, she had had occasional attacks of sharp squeezing pain beneath the right costal margin lasting two to ten minutes and associated with a slight swelling in that area. The pain and swelling were relieved by the taking of food. Twenty-eight years prior to admission, she had an enucleation of the right eye for glaucoma.

Physical examination revealed a pale, poorly nourished, slightly cyanotic woman sitting up in bed, with dyspnea, and complaining of substernal distress. There was marked pitting edema of both lower legs and of the sacrum. A deep 2-cm. scar was present on the sole of the right foot. The right eye was absent. The left eye was myopic, but examination of the pupil was negative. There was vacuolar degeneration of the lens. The disk was flat and showed a myopic crescent, and scattered about it were hemorrhages and exudate. External ocular movements were normal. The patient was edentulous and had a coated tongue. The tonsils were buried. The chest was somewhat barrel shaped, expansion was limited, and the accessory respiratory muscles were used extensively. There was dullness to flatness, with decreased breath sounds and moist rales, at both bases. The diaphragm was high, with limited excursion. The heart was enlarged to the left, but could not be outlined by percussion. The point of maximum intensity was felt 1.5 cm. to the left of the midclavicular line. Retromanubrial dullness was increased. The sounds were of good quality; there were no murmurs, and the rhythm was normal. The peripheral vessels were tortuous and sclerotic. No pulsations could be made out in either dorsalis pedis or posterior tibial arteries. Reflexes could not be obtained in the lower extremities, and there was impaired vibratory sense in both legs. Examination of the abdomen was negative.

The rectal temperature was 100°F., the pulse 98, and the respirations 20. The blood pressure was 130 systolic, 80 diastolic.

Examination of the urine showed a specific gravity of 1.022, a ++ test for albumin, a + test for

sugar, and an occasional red cell, 30 white cells and an occasional hyaline cast per high-power field. The blood showed a red-cell count of 4,260,000 with 74 per cent hemoglobin, and a white-cell count of 9500 with 60 per cent polymorphonuclears. The serum nonprotein nitrogen was 28 mg. and the protein 5.6 gm. per 100 cc. The fasting blood sugar was 374 mg. per 100 cc. A blood Hinton reaction was negative.

On the night of the day of admission, the patient complained of slight substernal oppression. At 5 o'clock the following morning, she seemed unusually drowsy and at 6 o'clock could not be roused. There were signs of an early left-sided hemiplegia. The heart sounds were poor, and the blood pressure 70 systolic, 40 diastolic. The respirations were shallow and weak. The rectal temperature was 103°F., the pulse 80, and the respirations 35.

The patient rapidly failed and died on the third hospital day. A short while before death, an electrocardiogram showed a PR interval of 0.16 second, a ventricular rate of 100 and normal rhythm. The ST intervals in Leads 1 and 2 were depressed, and those in Lead 3 were elevated. There was moderate left-axis deviation.

Differential Diagnosis

Dr. Paul D. White: Dyspnea was this patient's chief complaint.

We have shown in the last year or two, in association with Dr. Howard F. Root,* that coronary heart disease is much commoner in diabetic than in nondiabetic patients.

It is a little unusual for pain to radiate through to the back in acute coronary occlusion.

It is not likely that the rapid beating of the heart was responsible for such terrific pain as that described here. That is probably a secondary symptom due to the pain or whatever caused the pain, and not the primary cause of the pain itself. Persons who have coronary insufficiency may develop severe pain, but hardly of this severity, when they have paroxysmal tachycardia. It is not likely that the perspiration was due to apprehension alone. This patient was sturdy, and could stand pain and did not want to give in to it.

I should like to be sure that nausea and vomiting developed before and not after medication. Did the physician give her morphine?

Dr. Benjamin Castleman: There is a letter from her doctor stating that digitalis was given; there is no suggestion that he administered morphine.

*Root, H. F., Bland, E. F., Gordon, W. H., and White, P. D. Coronary atherosclerosis in diabetes mellitus: a postmortem study. *J. A. M. A.* 113:27-30, 1939.

Dr. White: The pain gradually subsided. Two weeks in bed is a short time for any episode as severe as this. That may indicate an unusually rapid recovery, or may have been due to refusal on her part to stay in bed more than that length of time. Whatever happened was followed by the appearance of dyspnea on slight exertion, which suggests that the patient got up too soon.

Three months after the onset of the acute illness, she became orthopneic, which means a progression of the dyspnea.

She had right-sided heart failure rapidly following extensive left-sided heart failure; that can be the only interpretation of this sequence of events. That the painful episode was what set off the congestive failure, we cannot be absolutely certain, but it looks so.

"For many years, the patient had had brief attacks of precordial pain frequently radiating down the arms." This suggests that she had been somewhat ailing for a long time but apparently not enough so to consult a physician. I should like to know more about the attacks of precordial pain. The precordium is quite extensive, and there is a good deal of difference in clinical significance between substernal pain and that at the cardiac apex or left-breast part of the precordium. The story sounds like angina pectoris, probably on effort.

"For several years, she had had occasional attacks of sharp squeezing pain. . . . The pain and swelling were relieved by the taking of food." That suggests hyperacidity and cardiospasm, a definite digestive disorder.

"Physical examination revealed a pale, poorly nourished, slightly cyanotic woman sitting up in bed, with dyspnea, and complaining of substernal distress." I have mentioned before that patients with dyspnea usually do not have substernal distress — in short, that they do not have myocardial and coronary insufficiency at the same time; hence the substernal distress may have been due to cardiospasm or other noncardiac causes.

"Retromanubrial dullness was increased." This is important if true. Of course, marked increase in retromanubrial dullness suggests aneurysmal dilatation of the aorta in a cardiovascular patient.

"There were no murmurs, and the rhythm was normal." This statement is very important in ruling out valvular disease.

The blood pressure was normal; there is no suggestion of hypertension. Apparently there was not a drop from a high blood pressure.

"The peripheral vessels were tortuous and sclerotic. No pulsations could be made out in either dorsalis pedis or posterior tibial arteries." In dia-

betic patients, one may find an obliterating sclerosis, which could cause these signs.

We can now begin to build up a story for a dissecting aortic aneurysm, with sudden anterior chest pain referred to the back, increase in retromanubrial dullness, and absence of pulsations in the feet.

"The temperature was 100° F." There may be slight fever due to congestive failure alone without the need of making an additional diagnosis of infarction or infection anywhere, but there is usually some complication in febrile patients with congestive heart failure to explain the fever.

Left-axis deviation is the most significant finding in the electrocardiogram. Nevertheless, change in the ST intervals may also be of some consequence.

In summary, we know that this patient had diabetes. She had extensive and severe arteriosclerosis, including the coronary arteries and probably the aorta. She had cardiac enlargement and failure. These things are quite clear. The points in doubt are the cause of the acute attack three months before she died and the cause of the final episode. It is too easy to diagnose myocardial infarction as explaining both, but nevertheless, — because it is most probable, even though too easy, — I shall give that as my first diagnosis, realizing that I am not at all sure of being correct. Dissecting aneurysm is a possibility. A dissection of the aorta is commoner in a person who is hypertensive, but it is not limited to hypertensive patients. It is conceivable that both conditions could be present in a patient of this sort, with a high degree of coronary-artery damage and secondary myocardial effects from it. Whether that is the only condition to be found is open to some doubt. Sudden intense pain radiating to the back, with the cutting off of the circulation to the feet, is strongly suggestive of dissecting aortic aneurysm, but the faulty peripheral circulation may be secondary to diabetic sclerosis of the vessels. The patient had had some indigestion. It is quite common for gallstones to be associated with coronary-artery disease, so that I should not be surprised if gallstones were present in this patient, although they were probably not responsible for the original severe attack of pain. Nausea and vomiting are commoner with gallstone colic than with attacks of coronary thrombosis, but once in a while an attack of biliary colic precipitates heart failure in a patient who has a good deal of heart disease to start with. I do not believe, however, that a digestive upset could explain the original attack. I should vote for the probability of myocardial infarction in general, but admit the possibility of a dissecting aortic aneurysm.

A Physician: How about the terminal event?

Dr. White: I should think that a fresh infarction could explain the terminal event, although if there had been a dissecting aortic aneurysm to explain the first episode, rupture of the aorta could account for the final illness. A cerebrovascular accident may also have occurred. It does not seem likely that the final episode was diabetic coma per se. I do not know whether it is possible to have hemiplegia due to diabetic coma complicating severe cerebral vascular disease without complete occlusion of a vessel. I cannot say whether fresh coronary thrombosis was the cause of death, but I think it was.

Dr. Howard B. Sprague: Do you think she might have had mural thrombus with embolism?

Dr. White: I wrote it down as a possibility, but I do not consider it an essential diagnosis in a person with so much cerebrovascular disease.

Dr. Castleman: Can you explain the hemiplegia solely on the basis of arteriosclerosis without thrombosis or embolism?

Dr. White: Yes; I think that I have been caught several times on terminal events of such a nature. In a similar way, abnormalities of the electrocardiogram can be explained by low pressure in a coronary circulation that is already at fault, without fresh coronary occlusion. Several times, I have diagnosed cerebral embolism in the presence of weakness on one side of the body or the other without finding such a condition at autopsy.

Clinical Diagnoses

Coronary occlusion.
Cardiac failure.
Generalized arteriosclerosis.
Diabetes mellitus.
Cerebral accident, with left hemiplegia.

Dr. White's Diagnoses

Diabetes mellitus.
Extensive arteriosclerosis, coronary, cerebral and peripheral.
Coronary occlusion, with myocardial infarction, old and new.
Congestive heart failure, left ventricular, followed by right.
Hemiplegia due to cerebral vascular insufficiency.
Dissecting aortic aneurysm, with terminal rupture?

Anatomical Diagnoses

Embolism of middle cerebral and posterior cerebral arteries, right and left.
Cerebral infarcts, bilateral, recent.
Coronary thrombosis, old.
Cardiac infarction, healed.
Chronic passive congestion of liver and spleen.
Hydrothorax, ascites and peripheral edema.
Arteriosclerosis, generalized, marked.

Pathological Discussion

Dr. Castleman: This patient was in severe failure, as shown by a liter of fluid in the abdomen and as much more in each chest cavity. The liver showed signs of chronic passive congestion. The heart weighed only 325 gm., was slightly dilated, and showed old myocardial infarction on the posterior aspect of the left ventricle and diffuse scarring throughout the myocardium. That was confirmed by microscopic sections, which revealed scarring in every microscopic field, a characteristic finding in almost every case of angina pectoris. All the coronary vessels were severely sclerotic — almost rigid tubes with extensive calcification. The left descending branch was completely obliterated by an old thrombus, and beyond it was another thrombus that was more recent, which would fit the episode of three months before entry. The orifice of the right coronary artery was almost completely covered by an atherosclerotic plaque, so that very little blood was getting to the heart muscle. No mural thrombus was noted. In the brain, there was an occlusion of the right middle cerebral artery beyond the openings of the lenticular striate branches, and an infarct of the right parietal lobe to correspond to that distribution. The infarction was very recent, and the occluding thrombus or embolus looked older than the infarct. I believe that it was an embolus, and the fact that we also found two recent lesions in each occipital lobe is more evidence that the process was embolic. The source could not be determined, although there may have been a few tiny mural thrombi on the endocardium that were not noticed at the time of autopsy. There was severe arteriosclerosis of the aorta, but no dissection.

Dr. White: The slight substernal oppression that was complained of the night before the patient died may have been an attack of angina pectoris.

Did she have gallstones?

Dr. Castleman: The gall bladder was completely obliterated, apparently from old chronic inflammation.

Is it not true, Dr. White, that if a patient is in heart failure one would not expect a dissecting aneurysm?

Dr. White: Yes; but this patient was not in heart failure three months ago. The important point was the explanation of the pain at that time.

Dr. Castleman: Do any of the patients with healed dissecting aneurysm die in heart failure?

Dr. White: I believe that, in a heart so seriously involved as this, one would prefer the initial diagnosis of coronary heart disease with angina pectoris, but the severe shock of a dissecting aneurysm might precipitate heart failure.

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WAR AND VENEREAL DISEASE

THE country is at war. For ultimate victory, among other items, the fighting services must have not only planes, guns and tanks, but proper food and good health; and of the factors causing disability among soldiers and sailors no one has been more important than venereal disease. As a complication of war, it has accompanied armies for centuries. Wherever armies have gone, the specter of venereal disease has stalked, and has immobilized manpower, often on a large scale. Today, the army camp, with its motorized equipment of modern warfare, is accompanied by the dangers of the trailer camp, as pointed out elsewhere in this issue of the *Journal*. And yet the past few years have indicated that much can be accomplished in the control of this scourge. If one studies the curve of the venereal-disease rate of the United States Army over the last fifty years, one finds a gradual and striking reduction from a peak of approximately 160 per 1000 in 1902 to a low of about 36 per 1000 in 1939.[1] In England, the total venereal-disease rate in the army has steadily fallen, and for the first five months of 1941 was only 8.4 per 1000, with the ratio of gonorrhea to syphilis remaining about 8:1.[2] In this country, in two large maneuver areas where venereal-disease control has been studied, gonorrhea was about four and ten times as frequent as syphilis.[3]

The incidence of venereal disease among selectees has been surprisingly low, and of course, no person with an active case is admitted to the Army or Navy. Moreover, steps are being taken to control these diseases even more effectively than in the last war. Although the medical officers of the Army and Navy are responsible for the prevention and effective treatment of disease, they need assistance to fulfill the requirements of modern preventive medicine. Thus, in July, 1941, Congress passed the May Act, which provides for the control of prostitution in such areas around military and naval establishments as are designated by the Secretary of War and the Secretary of the Navy. The Federal Bureau of Investigation has been made responsible for the enforcement of this law.

In August, 1941, the Secretary of War, through the Chief of Staff, issued an order regarding the prohibition of prostitution within reasonable distance of military establishments. This order placed the responsibility for the health and welfare of personnel on the commanding officer of each post or camp and outlined the procedure of obtaining local co-operation for the remedying of bad conditions, as well as that to be followed if local co-operation failed. To achieve the full effect of the May Act, the commanding officer may obtain aid from both the Federal Security Agency and the Adjutant General of the Army.

In addition, on October 2, 1941, the Federal Security Agency established the Division of Social Protection, whose purpose is primarily to "promote the public health by the reduction of venereal

disease through the repression of commercialized prostitution." The United States Public Health Service and the Defense, Health and Welfare Services are likewise under the Federal Security Agency, and both have departments dealing with venereal disease, as well as other health conditions. Furthermore, the Army and Navy Committee on Welfare and Recreation, the American Social Hygiene Association and various other agencies are in a position to aid in various phases of the problem.

The machinery for the control of venereal disease and for the prevention of its resulting disability seems to exist, even with the very rapid expansion of the military and naval forces that is bound to occur in the present emergency. The full efficiency of this machinery, however, will be attained only by the proper co-ordination of the various agencies participating in this program.

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ACUTE INTESTINAL OBSTRUCTION

Acute intestinal obstruction is one of the major problems of any surgical service and contributes to a large number of deaths. For the last five years in Massachusetts, intestinal obstruction has annually accounted for an average of 4 deaths per 100,000 population. Of course, not all these deaths resulted from acute conditions, but many other deaths from acute obstruction were probably not included, being masked under such diagnoses as appendicitis and salpingitis. If seen in the first six to twelve hours, no patient should die from simple obstruction due to adhesive bands, from gallstone obstruction or from intussusception, and very few should fail to react favorably to treatment for most other types of obstruction if they are intelligently handled by the physicians who first see them. In the past, a difficulty has been the obscurity of the diagnosis, because of the lack of localizing or of pathognomonic symptoms in the early curable stage of the illness. The diagnosis has been based, in most cases, purely on the history and abdominal palpation, accompanied, all too frequently, by the time-consuming and exhausting therapeutic test of multiple enemas.

Aids have recently been developed that greatly simplify and standardize the early diagnosis of acute obstruction. The outstanding one is x-ray examination of the abdomen by the so-called "flat plate" or "scout plate." Such an examination does not trouble the patient and gives definite information very early in the condition. To be effective, however, hospitals must be organized so that such plates can be read promptly. A delay of several hours in making a diagnosis of acute obstruction largely negates the advantage afforded by x-ray films of this type.

In this issue of the *Journal* is a paper concerning another very much neglected aid to such a diagnosis. Abdominal auscultation has been used in a relatively desultory fashion for years, but few physicians or surgeons have paid enough attention to it to perfect their interpretation of abdominal sounds. Only recently have adequate discussions of this subject come into prominence in surgical texts. One of the best is by Wangensteen,[1] who states, in a section on the diagnosis of acute intestinal obstruction:

> *Auscultation.* — The chief value of auscultation in an acute intestinal lesion relates to the determination of whether *intestinal colic* is absent or present. The repeated audition of borborygmi with the stethoscope at the acme of the pain of which the patient complains establishes the pain as being caused by the intestinal contraction. To be certain, borborygmi or intestinal noises may be heard in other disorders, but it is the intimate time relationship between noise and pain which identifies its origin. A noisy abdomen does not therefore indicate the presence of a mechanical obstruction of the bowel; such a finding only denotes the state of activity of the intestine. A silent abdomen indicates absence of intestinal activity; a noisy abdomen without *intestinal colic* signifies that the bowel is hyperactive.

Other excellent statements concerning auscultation are found in Vaughan's[2] section on appendicitis and Ochsner's[3] section on acute intestinal obstruction in *Nelson New Loose-Leaf Surgery*. However, Lewis and Firor,[4] writing on appendicitis in Christopher's *Text Book of Surgery*, do not mention auscultation, nor did Hertzler,[5] writing

on diseases of the peritoneum, and Cutler and Scott,[6] on postoperative complications, mention it in the somewhat older text, Graham's *Surgical Diagnosis*. In the latter book, however, Richardson,[7] in the section on the clinical manifestations of acute intestinal obstruction, makes the following significant statement, "On auscultation the gurgling due to hyperactive peristalsis is usually heard, a finding which is very useful in distinguishing mechanical from paralytic obstruction."

It should be noted that Wangensteen emphasizes a very important distinction in interpretation that is not made clear by Dr. Stevens, namely, that the loud and frequent sounds of hyperperistalsis mean hyperperistalsis — they do not necessarily mean obstruction. On the other hand, Dr. Stevens's courageous description of his three failures and one success should serve to teach others, who, like him, see such cases only rarely, concerning the possibilities in this field.

The interpretation of intestinal sounds, however, is not too simple and cannot be taught from a book or an article. There is a wide variation of intensity and frequency in relation to the physiologic state of digestion, with greater activity one or two hours after meals than at other times. It is imperative that each physician who is to use this diagnostic aid study normal intestinal sounds at all times of the day so that he can learn what is abnormal.

Another aid in intestinal obstruction is the Miller–Abbott or double-lumen tube. But this tube is used more to determine the location of an obstruction and to treat certain types of obstruction than to help in the original diagnosis. In particularly difficult cases in which a Miller–Abbott tube is thought to be near an obstruction, a small amount of thin barium may be introduced through it to outline the lesion. Ordinary barium examinations, however, should *never* be undertaken in the presence of acute or partial obstruction, since masses of barium are extremely difficult to handle if a resection is performed or if the intestine is opened for any purpose. If mineral oil happens to be mixed with the barium, as frequently occurs in these cases, a thick tenacious gummy mass is formed. Spilling of even a very small amount of this mixture into the peritoneal cavity almost invariably results in a fatal peritonitis.

Acute intestinal obstruction, except in those cases in which strangulation takes place, seldom causes severe immediate pain; furthermore, the pain is not localized. Any new type of abdominal pain should be viewed with suspicion. After palpation, one should listen to the intestinal sounds, and then, if there is the least doubt about what is going on, an x-ray examination without barium should be performed. With this evidence, diagnosis is usually surprisingly easy and the results of treatment extraordinarily good, because patients with obstruction are cared for early — when they should be.

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MEDICAL EPONYM

McBurney's Point

Charles McBurney (1845–1913) reported his "Experience with Early Operative Interference in Cases of Disease of the Vermiform Appendix" in the *New York Medical Journal* (**50:** 676–684, 1889) and described his famous point thus:

> The *exact* locality of the greatest sensitiveness to pressure has seemed to me to be usually one of importance. Whatever may be the position of the healthy appendix as found in the dead-house — and I am well aware that its position when uninflamed varies greatly — I have found in all of my operations that it lay, either thickened, shortened or adherent, very close to its point of attachment to the caecum. This, of course, must, in early stages of the disease, determine the seat of greatest pain *on pressure*. And I believe that in every case the seat of greatest pain, *determined by the pressure of one finger*, has been very exactly between an inch and a half and two inches from the anterior spinous process of the ilium on a straight line drawn from that process to the umbilicus. This may appear to be an affectation of accuracy, but, so far as my experience goes, the observation is correct.

R. W. B.

MASSACHUSETTS MEDICAL SOCIETY

STATED MEETING OF THE COUNCIL

A stated meeting of the Council will be held in John Ware Hall, Boston Medical Library, 8 Fenway, on Wednesday, February 4, 1942, at 10:30 a.m.

Business:

1. Call to order at 10:30 a.m.
2. Presentation of record of meeting held October 1, 1941, as published in the *New England Journal of Medicine*, for November 6, 1941.
3. Report of Auditing Committee and of Treasurer.
4. Reports of standing and special committees.
5. Appointment of Delegates.
   (*a*) To the House of Delegates, American Medical Association, for two years from June 1, 1942.
   (*b*) To the annual meetings of the five New England state medical societies in 1942.
   (*c*) To the Annual Congress of the American Medical Association on Medical Education and Licensure at the Palmer House, Chicago, February 16 and 17, 1942.
6. Such other business as may lawfully come before the meeting.

MICHAEL A. TIGHE, M.D.
Secretary

The president, Dr. Ober, requests that all councilors attending the meeting remain until the business of the meeting is finished.

* * *

IMPORTANT ADDENDA TO BE CONSIDERED BY THE COUNCIL

COMMITTEE ON PUBLIC RELATIONS

Subcommittee on Tax-Supported Medical Care

The special committee having this matter in hand will offer the following report:

Medical Relief. Of the total bill for medical care nearly a quarter is now paid from tax revenues.

The quality of hospital medical care is effectively supervised by the professional staff. The quality of medical care to the indigents and old-age recipients outside hospitals is too often below acceptable standards.

The Massachusetts Medical Society believes that it should endeavor to improve these standards and offers its services in the interest of better distribution of medical care in this field.

If the physicians of a given locality can agree among themselves to formulate and to participate seriously in a plan adapted to the medical needs and medical and economic resources of their community, the state laws and the regulations of the State Department of Public Welfare make it possible for the indigent patient to choose his own physician and for the physician to treat his own patients, with payment for his services supplied from public funds. Although the local public welfare official is responsible for providing necessary medical care for indigent persons, the determination of medical needs should now be made with the advice of the medical profession. All physicians should be encouraged to participate in this service.

For the purpose of maintaining orderly, practical and logical thinking on the subject of medical welfare policies, the following points must be kept in mind. Under various Massachusetts laws, local welfare officials are empowered to provide medical care on a salary basis or on a fee-for-service basis; consequently, the indigent patient may or may not have the right of free choice of physicians, according to the procedure adopted in any given locality. In addition, in cases which receive reimbursement from the State, their local welfare departments must be operated under the rules and regulations promulgated by the State Department of Public Welfare. It should also be noted that the local welfare official is legally responsible, to his community and to the State, for the entire conduct of his department, and he can neither delegate nor share this responsibility. He can seek and accept advice or suggestions concerning medical problems and procedures, but in the final analysis responsibility for all decisions rests solely on him.

The State Department of Public Welfare now has a full-time medical adviser, and he in turn has a medical advisory committee (selected from a group nominated at his request by the Massachusetts Medical Society).

Free Choice of Physician. The State Department of Public Welfare points out that under the law it cannot guarantee free choice of physician but draws attention to the fact that whereas in some localities it has been long-standing practice to employ salaried doctors, introduction of a new medical plan has had a tendency to increase consideration of the use of the fee-for-service basis, since provision is made for local medical controls. The department approves the principle of free choice and is endeavoring to extend its practice.

In the majority of communities of this state (about 67 per cent), a system of free choice of physician on a fee-for-service basis is used by the local welfare agency. However, the department has neither the power under the law, nor does its experience to date indicate the need, to mandate communities to the extent that they *must* use the fee-for-service system rather than salary or contract. It is the major responsibility of the department to see that the scope of the program provides adequate service of high quality at reasonable cost to the taxpayers. It is believed that for the department to *mandate* one way or the other would introduce "state medicine" to the fullest extent.

Advisory Committee. The attention of the local public-welfare official is called to the value of securing the full co-operation of his county (district) medical society in the development of an approved local medical program. The State Department of Public Welfare agrees that there are advantages in the establishment of a medical advisory committee in each public-welfare district and agrees to use and advocate the use of these committees and to assist in a general determination of their functions. These committees can advise and suggest, and can recommend policies for supervision and administration, but the responsibility for all acts and decisions must remain — and we believe should remain — in the hands of the local welfare official. State reimbursement on a local fee schedule is conditioned on the department's approval of this schedule as being reasonable for the particular community, rather than on the basis of a state-wide fee schedule. Considerable study is now being given to the question of medicines and drugs, — a few localities having reached a fairly satisfactory solution of this prob-

lem,—and it can be expected that with local assistance much of the difficulty and criticism will eventually be eliminated. It is agreed that no ruling on a medical question should be made by a local welfare official in the absence of a definite recommendation by the medical advisory committee.

Attention is called to the value of an active professional advisory committee in providing the local public-welfare official with professional advice in the development and revision of the policies included in the approved local medical program, in the arbitration and discipline of professional problems and in the operation of survey boards to review and plan proper medical care for persons suffering from prolonged or disabling illnesses or presenting special or unusual medical needs. The medical advisory committee may be appointed from a list nominated for the purpose by the county (district) medical society. Where deemed advisable, related or integrated committees may be created in the same way to include representatives of other professions, institutions and laymen.

Outpatient Departments and Clinics. The hospital outpatient department should be used as a diagnostic center and treatment auxiliary, thereby frequently substituting this adequate service for the more costly hospital admission. Many welfare patients are admitted and kept in hospitals a week who could receive adequate studies by an outpatient diagnostic group. Savings in this field could be used to compensate more adequately the physician for better medical care.

With the establishment of the local medical plan, the department has no choice but to insist that existing clinics and other medical resources be used to the fullest, *reasonable* extent. The department does not, however, insist on the use of such resources where they fail to meet the purpose for which they were established. The department believes that where local clinics infringe on or exploit the local medical group, this is a matter for arbitration between local officials and professional groups, and not subject to state interference. Exploitation of the medical profession is unsound. It is entirely possible that, wherever local medical advisory committees really work and function, salaried practice and the overuse of clinics may be found to be increasingly less desirable medically, socially and economically. This is not to say that the solution of these problems will be merely a matter of simple evolution but rather to emphasize that their solution directly depends on the amount of thought and consideration given them.

Co-ordination of Service Plans. There are several methods of providing physicians' services. These methods, their costs and the results obtained vary with the locality, to a considerable extent dependent on the judgment and experience of the local welfare official and on the local conditions and needs with which he is confronted. However, nowhere in this state is there a formal, functioning mechanism that integrates and correlates all the services which are provided in a community at public expense. Current systems of expenditure for and distribution of tax-supported medical care may only *seem* to be economical. For example, if total costs were to be analyzed, it would be found that many cases are unnecessarily hospitalized thereby multiplying many times the cost of case management. Only by having the complete picture, especially regarding total individual costs, can the appropriate bodies, the welfare officials and the medical-care professions co-operate to the end that the medical needs of the individual and the community are met efficiently as well as economically. It is hoped that machinery may be evolved which will supply this need.

Practically every plan designed to assist low-income groups or the indigent to obtain good medical care involves some reduction in the customary fees paid to physicians for similar services.

Rates must bear a reasonable relation between customary local expenditures for medical service and the ability of the public to pay.

The physician's overhead averages over 40 per cent. We realize that needs, costs and available revenue are interrelated items which affect the quality, adequacy and economy of tax-supported medical care.

Available revenue should be based on economics, and the physician should not be expected to carry the whole load. He pays his share of taxes to support welfare cases and then provides medical care to this group with monetary compensation that is, in some cases, ridiculously low.

ELMER S. BAGNALL, M.D.
Chairman

Subcommittee on Prepaid Medical-Care Costs Insurance

The special committee having this matter in hand will offer the following six recommendations:

1. That permission be granted the Massachusetts Medical Service Corporation to co-ordinate its activities with the Blue Cross relative to (1) the presentation of joint contracts to subscribers and (2) administrative functioning and expense. This shall be done with each group retaining (1) its distinct independent corporate identity and (2) the right to issue separate contracts, the relation of the two corporations to be determined on a contract basis.

   Reasons: Other medical groups have found this advantageous; industry will be interested in one contract and one payroll deduction, not two; we shall benefit by the prestige, sales approach and local experience of the Blue Cross; it is sound economically (independently, our overhead would be 22 to 24 per cent; conjointly, it may be 9 to 10 per cent).

2. That a special committee be appointed by the Executive Committee to select an executive director.

   Reasons: The special committee has no time for this, and it would compromise our future usefulness to make a selection which might not be acceptable to a portion of the Society. Much ground must be explored: Should the director be lay or medical? Is the best man to be found locally or afield? Will the best man be found in organizations like the associated hospital or medical-service corporations of other states? To work over this ground requires a separate committee.

3. That authority be granted to the special committee to hire an actuary, provided that sufficient actuarial data are not made available to the committee through the Massachusetts Division of Insurance.

   Reasons: Further progress requires accurate actuarial studies based on the experience of the Blue Cross in Massachusetts and that of medical-service schemes in other states. Such services should now be available to the special committee.

4. That income levels for eligibility for medical-service contracts (contrasted to medical-indemnity contracts) be set up at $2000 for an individual and $2500 for a family. At present, only medical-indemnity, and not medical-service, contracts shall be offered above these levels.

Reasons: This is the median level established in Michigan; New Jersey established a $1600 level but changed to $2000; Buffalo started with a low level, but was required to raise it to $1800 by the insurance commissioner; California set $3000; Utica has no level. This level, on the basis of statistical studies, includes the bulk of the low-income wage earners of Massachusetts. A program with lower levels would exclude so many industrial wage earners that industry might not be interested and the program might fail. This simple basis of selection must be established or industry will not co-operate; they will not enter a complex contract calling for the establishment of varying income and family subdivision groups.

5. That contracts be prepared and presented on the following basis: (1) the quick preparation of a surgical contract for hospital surgical expense; (2) the preparation, as quickly as feasible, of a total hospital medical-care contract to cover all medical fields incidental to hospital expense; (3) the careful slow preparation of a comprehensive medical-care contract covering total medical-care expense in the home, office and hospital, to be presented when the Massachusetts Medical Society so determines.

Reasons: The final contract represents the ideal. To present it would require a year or two of study. The public may not be ready to accept the premiums of such a policy, as suggested by experience of other organizations. An early inadequate enrollment in this group would create a serious financial deficit. Industry and individuals and the statements of the Blue Cross indicate that hospital coverage for surgery or total hospital medical care is desired. Authorities state that this is the reasonable, sound approach. From this base we could educate the public to comprehensive medical-care contracts, create a reserve, establish the corporation and start it functioning within a few months. There is need of urgent action which can be safely taken on the basis of all but the comprehensive medical-care contract.

6. That such sums as are indicated by the Commissioner of Insurance (presumably between $10,000 and $25,000) be loaned to the Massachusetts Medical Service Corporation by the Massachusetts Medical Society; and that other funds be raised by an enrollment fee from the participating physicians (to be returned to physicians enrolling within a given period of time, when, as and if the corporation is financially able to do so).

JAMES C. MCCANN, M.D.
Chairman

COMMITTEE ON MEDICAL EDUCATION

The committee has approved the following list of medical schools and colleges.

ARKANSAS

University of Arkansas School of Medicine, Little Rock.

CALIFORNIA

University of California Medical School, Berkeley–San Francisco.
College of Medical Evangelists, Loma Linda–Los Angeles.
University of Southern California School of Medicine, Los Angeles.
Stanford University School of Medicine, Stanford University–San Francisco.

COLORADO

University of Colorado School of Medicine, Denver.

CONNECTICUT

Yale University School of Medicine, New Haven.

DISTRICT OF COLUMBIA

Georgetown University School of Medicine, Washington.
George Washington University School of Medicine, Washington.
Howard University College of Medicine, Washington.

GEORGIA

Emory University School of Medicine, Atlanta.
University of Georgia School of Medicine, Augusta.

ILLINOIS

Loyola University School of Medicine, Chicago.
Northwestern University Medical School, Chicago.
Rush Medical College, University of Chicago.
The School of Medicine of the Division of the Biological Sciences, University of Chicago.
University of Illinois College of Medicine, Chicago.

INDIANA

Indiana University School of Medicine, Bloomington–Indianapolis.

IOWA

State University of Iowa College of Medicine, Iowa City.

KANSAS

University of Kansas School of Medicine, Lawrence–Kansas City.

KENTUCKY

University of Louisville School of Medicine, Louisville.

LOUISIANA

Louisiana State University School of Medicine, New Orleans.
Tulane University of Louisiana School of Medicine, New Orleans.

MARYLAND

Johns Hopkins University School of Medicine, Baltimore.
University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore.

MASSACHUSETTS

Boston University School of Medicine, Boston.
Harvard Medical School, Boston.
Tufts College Medical School, Boston.

MICHIGAN

University of Michigan Medical School, Ann Arbor.
Wayne University College of Medicine, Detroit.

MINNESOTA

University of Minnesota Medical School, Minneapolis.

MISSOURI

St. Louis University School of Medicine, St. Louis.
Washington University School of Medicine, St. Louis.

NEBRASKA

Creighton University School of Medicine, Omaha.
University of Nebraska College of Medicine, Omaha.

NEW YORK

Albany Medical College, Albany.
Long Island College of Medicine, Brooklyn.

University of Buffalo School of Medicine, Buffalo.
Columbia University College of Physicians and Surgeons, New York.
Cornell University Medical College, New York.
New York Medical College, Flower and Fifth Avenue Hospitals, New York.
New York University College of Medicine, New York.
University of Rochester School of Medicine and Dentistry, Rochester.
Syracuse University College of Medicine, Syracuse.

NORTH CAROLINA

Duke University School of Medicine, Durham.

OHIO

University of Cincinnati College of Medicine, Cincinnati.
Western Reserve University School of Medicine, Cleveland.
Ohio State University College of Medicine, Columbus.

OKLAHOMA

University of Oklahoma School of Medicine, Oklahoma City.

OREGON

University of Oregon Medical School, Portland.

PENNSYLVANIA

Hahnemann Medical College and Hospital of Philadelphia.
Jefferson Medical College of Philadelphia.
Temple University School of Medicine, Philadelphia.
University of Pennsylvania School of Medicine, Philadelphia.
Woman's Medical College of Pennsylvania, Philadelphia.
University of Pittsburgh School of Medicine, Pittsburgh.

SOUTH CAROLINA

Medical College of the State of South Carolina, Charleston.

TENNESSEE

University of Tennessee College of Medicine, Memphis.
Meharry Medical College, Nashville.
Vanderbilt University School of Medicine, Nashville.

TEXAS

Baylor University College of Medicine, Dallas.
University of Texas Faculty of Medicine, Galveston.

VERMONT

University of Vermont College of Medicine, Burlington.

VIRGINIA

University of Virginia Department of Medicine, Charlottesville.
Medical College of Virginia, Richmond.

WISCONSIN

University of Wisconsin Medical School, Madison.
Marquette University School of Medicine, Milwaukee.

CANADA

University of Alberta Faculty of Medicine, Edmonton, Alberta.
University of Manitoba Faculty of Medicine, Winnipeg, Manitoba.
Dalhousie University Faculty of Medicine, Halifax, Nova Scotia.
Queen's University Faculty of Medicine, Kingston, Ontario.
University of Western Ontario Medical School, London, Ontario.
University of Toronto Faculty of Medicine, Toronto, Ontario.
McGill University Faculty of Medicine, Montreal, Quebec.
University of Montreal Faculty of Medicine, Montreal, Quebec.
Laval University Faculty of Medicine, Quebec, Quebec.

JOHN P. MONKS, M.D.
Chairman

COMMITTEE ON MATERNAL WELFARE

CAUSES OF MATERNAL DEATH IN MASSACHUSETTS DURING 1940 (*continued*)

HEMORRHAGE

The number of deaths due to hemorrhage (27) compares favorably with the number so allocated (36) in 1939. Table 1 presents an analysis of the cases.

Post-partum hemorrhage. In this series, post-partum hemorrhage was the primary cause of death in 10 cases. One case occurred in a patient with a blood pressure of 230 systolic, 120 diastolic, when she entered the hospital; however, an estimation of the record leads one to believe that the real cause of death was post-partum hemorrhage.

TABLE 1. *Deaths due to Hemorrhage.*

CAUSE	NO. OF DEATHS
Post-partum hemorrhage	10
Separated placenta	7
Placenta previa	5
Abortion	2
Inversion of the uterus	2
Varicosities	1

Two patients died of hemorrhage from two to four hours following delivery and after the attending physician had left the patient. It is unfortunate that transfusion was not used in any of these cases. One patient, on whom a cesarean section was performed, died two and a half hours after delivery. The physician was not in attendance at the time of the catastrophe, and no transfusion was given. One patient, a very unusual case, died of a profound hemorrhage two days after delivery. This, of course, could have been caused only by some type of retained placenta. In criticism, the general use of transfusion must be stimulated. Intravenous ergotrate and repeated transfusions should almost invariably ensure recovery in all cases of hemorrhage due to an atonic uterus. In none of these cases was hysterectomy attempted. This operation should always be considered in certain cases.

Separated placenta. Seven cases were classified as caused by separation of the placenta. Five were typical, completely separated placentas with the

characteristic tight uterus. In no case, it is interesting to note, was the Dublin method of cervical packing and the Spanish windlass employed. One case was treated as expertly as possible by a transfusion five times after hysterectomy had been performed and yet resulted fatally, which shows the inherent seriousness of this particular complication. *Accouchement forcé* was practiced in 2 cases. That this operation must never be employed — for whatever reason — has been brought out repeatedly in this column. The procedure has absolutely no place in obstetrics; it is never to be condoned.

Placenta previa. There were only 5 cases of placenta previa. It is interesting to note that the number of separated placentas as a cause of death is greater than the number attributed to placenta previa. Certainly, some type of separated placenta is a much commoner cause of bleeding than placenta previa. One case occurred in a patient who had had two previous cesarean sections, and in this pregnancy, a complete placenta previa and very free bleeding were present. At cesarean section, the placenta was found not only to be complete but to be a placenta accreta as well, and in spite of hysterectomy this patient succumbed. One patient with a complete placenta previa died undelivered; since she had been under observation in a hospital, there is little excuse for this fatality. It is evident from a review of these cases that transfusion does not play so important a part in the treatment of placenta previa as it should, and this must mean that some hospitals are not so adequately prepared for this procedure as they should be.

Abortion. There is little to be said of the abortions. Both these cases were probably criminally induced, and both patients died of massive hemorrhage. Had these patients been under good hospital care, death from this cause certainly would have been avoided.

Inversion of the uterus. It is very interesting that 2 cases of acute inversion of the uterus should occur in one year accompanied by massive uncontrollable bleeding that resulted in death. In neither case was the inversion suspected until after death. There is no excuse for the lack of diagnosis. Had the diagnosis been made, these patients probably would not have succumbed. Most acute inversions can readily be replaced under anesthesia, and those that cannot are readily replaced by laparotomy. It is difficult in any way to condone these deaths.

Varicosities. The case of the patient who died from bleeding from varicosities and vaginal tiss. e is most unusual. This patient was not transfused, and so far as one can make out, oozing from the lacerated surfaces was uncontrollable.

* * *

The decreased number of fatal hemorrhages is commendable. The lack of transfusion in many cases is hard to understand. If there are hospitals in Massachusetts today that are not equipped to deal with acute hemorrhage by transfusion, these hospitals are blameworthy. It is shocking to realize that 2 patients died of post-partum hemorrhage a few hours after delivery and after the medical attendants had left. Education should teach that *accouchement forcé* should never be employed in obstetrics, and emphasis on greater conservatism in the handling of separated placenta is necessary to reduce the mortality from this condition.

POSTGRADUATE EXTENSION COURSES

The postgraduate extension courses are sponsored by the Massachusetts Medical Society in co-operation with the Massachusetts Department of Public Health and the United States Public Health Service. The registration fee for the general course is $5.00, with no fee for the course in venereal disease. All legally registered physicians of the Commonwealth are eligible to enroll. For further information, the chairman of the district committee on postgraduate instruction should be consulted.

The programs for the winter sessions are as follows:

BERKSHIRE DISTRICT: PITTSFIELD

Combined General and Venereal Disease Course*

SUBJECT	DATE
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects) Syphilis of the Newborn: Early lesions of acquired syphilis and importance of intensive treatment; the rapid use of massive doses of arsenicals by continuous intravenous treatment; review of this modern therapy and its evaluation	March 12
Pediatrics: Case Discussions and Clinics Cardiovascular Syphilis	March 19
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery Differential Diagnosis and Treatment of Gonorrhea: Prevention and complications	March 26
Indications and Technic of Induction of Labor, with Case Histories Neurosyphilis as a Possible Factor in Diseases of the Nervous System	April 2
Fractures in General with Treatment Bone Lesions of Syphilis: Syphilitic skin lesions — differential diagnosis and treatment	April 9
Kidney Disease and Hypertension Lymphogranuloma Inguinale and Ducrey's Bacillus Infection	April 16

*One half of a session will be devoted to each subject.

Subject to be announced
Pelvic Inflammatory Disease in the Female Due to Gonorrhea and Other Infections.. April 23
Diagnosis and Treatment of Hemorrhage in Pregnancy, with Case Histories
Interpretation of Laboratory Data in the Diagnosis of Syphilis, Gonorrhea and Other Infectious Diseases..... April 30

Meetings to be held at the Bishop Memorial Building, Thursdays, at 4:30 p.m.

Harry G. Mellen, M.D., *Chairman*
150 North Street, Pittsfield

Bristol South District: Fall River

SUBJECT	DATE
Dermatitis and Eczema in Wartime Industry: Diagnosis, local treatment and prevention — cases that fall under workmen's compensation law and noncompensation cases illustrated by motion pictures and slides in color	January 20
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	January 27
Pediatrics: Case Discussions and Clinics	February 3
Pneumonia and Its Complications: Early treatment, chemotherapy	February 10
Indications and Technic of Induction of Labor, with Case Histories	February 17
Diagnosis and Treatment of Surgical Diseases of the Stomach and Duodenum	February 24
Kidney Disease and Hypertension	March 3
Diagnosis and Treatment of Hemorrhage in Pregnancy, with Case Histories	March 10

Meetings to be held at the Union Hospital, Tuesdays, at 4:30 p.m.

Thomas L. Gettings, M.D., *Chairman*
1042 Plymouth Avenue, Fall River

Bristol South District: New Bedford

SUBJECT	DATE
Cardiovascular Syphilis	January 23
Differential Diagnosis and Treatment of Gonorrhea: Prevention of complications	January 30
Pelvic Inflammatory Disease in the Female Due to Gonorrhea and Other Infections	February 6
Syphilis of the Newborn: Early lesions of acquired syphilis and importance of intensive treatment; the rapid use of massive doses of arsenicals by continuous intravenous treatment; review of this modern therapy and its evaluation	February 13
Interpretation of Laboratory Data in the Diagnosis of Syphilis, Gonorrhea and Other Infectious Diseases	February 20
Neurosyphilis as a Possible Factor in Diseases of the Nervous System	February 27
Bone Lesions of Syphilis: Syphilitic skin lesions — differential diagnosis and treatment	March 6
Lymphogranuloma Inguinale and Ducrey's Bacillus Infection	March 13

Meetings to be held at St. Luke's Hospital, Fridays, at 4:15 p.m.

Robert H. Goodwin, M.D., *Chairman*
84 Spring Street, New Bedford

Hampden District: Springfield

SUBJECT	DATE
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	March 4
Kidney Disease and Hypertension	March 11
Dermatitis and Eczema in Wartime Industry: Diagnosis, local treatment and prevention — cases that fall under workmen's compensation law and noncompensation cases illustrated by motion pictures and slides in color	March 18
Earache	March 25
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery	April 1
Indications and Technic of Induction of Labor, with Case Histories	April 8
Pneumonia and Its Complications: Early treatment, chemotherapy	April 15
Pediatrics: Case Discussions and Clinics	April 22

Meetings to be held Wednesdays at the Academy of Medicine, Professional Building, 20 Maple Street, Springfield, at 4:00 p.m.

Alfonso A. Palermo, M.D., *Chairman*
121 Chestnut Street, Springfield

Middlesex East District: Winchester

SUBJECT	DATE
The Use of Chemotherapy in Surgical Practice	March 10
Kidney Disease and Hypertension	March 17
Cesarean Section: Indications for use of various types, with case histories	March 24
Pediatrics: Case Discussions and Clinics	March 31
Pneumonia and Its Complications: Early treatment, chemotherapy	April 7
Head Colds and Complications	April 14
Diagnosis and Treatment of Hemorrhage in Pregnancy, with case histories	April 21
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	April 28

Meetings to be held in the Nurses' Home, Winchester Hospital, Tuesdays, at 4:15 p.m.

T. E. Caulfield, Jr., M.D., *Chairman*
14 Church Avenue, Woburn

Norfolk District: Norwood

SUBJECT	DATE
Head Colds and Complications	January 15
Indications and Technic of Induction of Labor, with Case Histories	January 29
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery	February 12
Pneumonia and Its Complications: Early treatment, chemotherapy	February 26
Dermatitis and Eczema in Wartime Industry: Diagnosis, local treatment and prevention — cases that fall under workmen's compensation law and noncompensation cases illustrated by motion pictures and slides in color	March 12
Kidney Disease and Hypertension	March 26

Diagnosis and Treatment of Hemorrhage in Pregnancy, with Case Histories	April 9
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	April 23

Meetings to be held every other Thursday, at the Norwood Hospital, at 8:45 p.m.

Hugo B. C. Riemer, M.D., Norwood, *Chairman*
Office, 128 Newbury Street, Boston

NORFOLK SOUTH DISTRICT: QUINCY

Combined General and Venereal Disease Course

SUBJECT	DATE
Head Colds and Complications	March 2
Indications and Technic of Induction of Labor, with Case Histories	March 9
Syphilis of the Newborn: Early lesions of acquired syphilis and importance of intensive treatment; the rapid use of massive doses of arsenicals by continuous intravenous treatment; review of this modern therapy and its evaluation	March 16
Diagnosis and Treatment of Hemorrhage in Pregnancy, with Case Histories	March 23
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	March 30
Interpretation of Laboratory Data in the Diagnosis of Syphilis, Gonorrhea and Other Infectious Diseases	April 6
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery	April 13
Dermatitis and Eczema in Wartime Industry: Diagnosis, local treatment and prevention — cases that fall under workmen's compensation law and noncompensation cases illustrated by motion pictures and slides in color	April 20
Pneumonia and Its Complications: Early treatment, chemotherapy	April 27
Kidney Disease and Hypertension	May 4

Meetings to be held at the Quincy City Hospital, Mondays, at 8:30 p.m.

David L. Belding, M.D., Hingham, *Chairman*
Office, 80 East Concord Street, Boston

WORCESTER DISTRICT: MILFORD

SUBJECT	DATE
Kidney Disease and Hypertension	February 24
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery	March 3
Head Colds and Complications	March 10
Indications and Technic of Induction of Labor, with Case Histories	March 17
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	March 24
Pneumonia and Its Complications: Early treatment, chemotherapy	March 31
Dermatitis and Eczema in Wartime Industry: Diagnosis, local treatment and prevention — cases that fall under workmen's compensation law and noncompensation cases illustrated by motion pictures and slides in color	April 7
Diagnosis and Treatment of Hemorrhage in Pregnancy, with Case Histories	April 14

Meetings to be held in the Nurses' Home of the Milford Hospital, Tuesdays, at 8:30 p.m.

Joseph Ashkins, M.D., *Chairman*
36 Pine Street, Milford

WORCESTER NORTH DISTRICT: FITCHBURG

SUBJECT	DATE
Pneumonia and Its Complications: Early treatment, chemotherapy	March 6
Recent Advances in the Preoperative and Postoperative Care of Patients Requiring Major Surgery	March 13
The Diagnosis and Treatment of Surgical Diseases of the Stomach and Duodenum	March 20
Subject to be announced	March 27
Diagnosis and Treatment of Acute Intestinal Obstruction	April 3
Acute Abdominal Disease Among Infants and Children (Medical and Surgical Aspects)	April 10
Indications and Technic of Induction of Labor, with Case Histories	April 17
Kidney Disease and Hypertension	April 24

Meetings to be held in the Nurses' Home of the Burbank Hospital, Fridays, at 4:30 p.m.

George P. Keaveny, M.D., *Chairman*
62 Fox Street, Fitchburg

FACULTY FOR THE EXTENSION COURSES

Dermatology. Chairman: Dr. John G. Downing; instructors: Drs. John Adams, Jr., Leonard E. Anderson, Bernard Appel, J. Harper Blaisdell, G. Marshall Crawford, Francis P. McCarthy, Mildred H. Ryan, Jacob H. Swartz and Maurice M. Tolman.

Ear, Nose and Throat. Chairman: Dr. LeRoy A. Schall; instructors: Drs. Charles T. Porter, Lyman G. Richards, and John R. Richardson.

Medicine. Chairmen: Drs. Chester S. Keefer and Robert T. Monroe; instructors: Drs. Harry A. Derow, Lewis Dexter, Laurence B. Ellis, Maxwell Finland, Francis C. Lowell and Robert W. Wilkins.

Obstetrics. Chairmen: Drs. Meinolph V. Kappius and Roy J. Heffernan; instructors: Drs. Christopher J. Duncan, M. Fletcher Eades, James C. Janney, Foster S. Kellogg, Joseph W. O'Connor, Louis E. Phaneuf, John Rock, Judson A. Smith and Raymond S. Titus.

Pediatrics. Chairmen: Drs. Warren R. Sisson and James M. Baty; instructors: Drs. Elmer W. Barron, John A. V. Davies, Louis K. Diamond, R. Cannon Eley, Joseph Garland, Harold L. Higgins, Edwin H. Place and Clement A. Smith.

Surgery. Chairmen: Drs. Richard H. Sweet and Thomas J. Anglem; instructors: Drs. Robert R. Linton, Henry C. Marble and Richard H. Wallace.

Venereal Disease. Chairmen: Drs. Chester S. Keefer and Robert T. Monroe; instructors: Drs. David L. Belding, Norman H. Boyer, Earle M. Chapman, Oscar F. Cox, Francis R. Dieuaide, John H. Dingle, Francis M. Forster, E. Parker Hayden, Rudolph Jacoby, William E. Long, H. Houston Merritt, Harry C. Solomon, Francis M. Thurmon and Paul A. Younge.

DEATHS

BRIGGS — J. EMMONS BRIGGS, M.D., of North Dighton, died January 3. He was in his seventy-second year.

Dr. Briggs received his degree from Boston University School of Medicine in 1890. He was surgeon-in-chief at

the Massachusetts Memorial Hospitals from 1916 to 1932, and professor of surgery at Boston University School of Medicine from 1918 to 1932. He was a fellow of the American College of Surgeons and a member of the Massachusetts Medical Society, the Boston Surgical Society and the American Medical Association.

His widow survives him.

PAINE — MORTIMER H. PAINE, M.D., of South Hanson, died October 1. He was in his sixty-sixth year.

Dr. Paine received his degree from Tufts College Medical School in 1909. He was a former member of the Massachusetts Medical Society.

SEARS — HENRY F. SEARS, M.D., of Boston, died January 1. He was in his eighty-first year.

Dr. Sears received his degree from Harvard Medical School in 1887. He was assistant pathologist at the Boston City Hospital from 1888 to 1894, when he retired from active practice. He was a member of the Massachusetts Medical Society and the American Medical Association.

He is survived by two daughters and a son.

STOWELL — EDMUND C. STOWELL, M.D., of Marlboro, New Hampshire, died December 20. He was in his seventy-sixth year.

A native of New York, Dr. Stowell received his degree from Harvard Medical School in 1892. He was a member of the Massachusetts Medical Society and the New Hampshire Medical Society, and a fellow of the American Medical Association.

He is survived by his widow, three sons and a sister.

WAR ACTIVITIES

UNITED STATES ARMY

The following medical officers entered on active duty between December 28, 1941, and January 3, 1942:

Collins, Roy W., Lieut., of Colchester, Vermont: Fort Adams, Rhode Island.

Neff, Richard S., Lieut., of Boston, Massachusetts: Fort Devens, Massachusetts.

Borenstine, Joseph, Lieut., of Boston, Massachusetts: Fort Devens, Massachusetts.

Sutch, Gabriel, Lieut., of Howard, Rhode Island: Fort Devens, Massachusetts.

Scribner, Robert S., Lieut., of Haverhill, Massachusetts: Camp Edwards, Massachusetts.

Harris, Oliver J., Lieut., of Boston, Massachusetts: Westover Field, Massachusetts.

Criscuolo, Joseph A., Lieut., of New Haven, Connecticut: Fort H. G. Wright, Connecticut.

Windus, Charles E., Lieut., of New Haven, Connecticut: Army Air Base, Bangor, Maine.

Kriedberg, Marshall, Lieut., of Dorchester, Massachusetts: Army Air Base, Bangor, Maine.

Yavarow, Millin M., Lieut., of Everett, Massachusetts: Manchester Air Base, Manchester, New Hampshire.

Haselhuhn, Donald H., Lieut., of Springfield, Massachusetts: Army Air Base, Manchester, New Hampshire.

Lamb, Francis D., Lieut., of Warwick, Rhode Island: Windsor Locks, Connecticut.

Duennevier, Harold W., Lieut., of Hartford, Connecticut: Windsor Locks, Connecticut.

CORRESPONDENCE

PREMARITAL MEDICAL EXAMINATION

To the Editor: Since the passage of the Massachusetts premarital health examination law, certain problems have confronted both physicians and official agencies which have needed clarification. Among these problems is the nature of the examination required by the law. Because of the increasingly confused situation, the Department of Public Health decided to submit this question to the Attorney General's Office for legal interpretation.

We enclose a copy of the Department's letter to the Attorney General requesting interpretation of certain provisions of the premarital health examination law and a copy of the Attorney General's reply. We believe that publication of this correspondence in the *Journal* will help physicians to understand more adequately the requirements of the law.

We also enclose a copy of the law which you may wish to reprint in the *Journal*.

PAUL J. JAKMAUH, M.D.
Commissioner of Public Health

State House
Boston

* * *

November 21, 1941

The Honorable Robert T. Bushnell
Attorney General
State House
Boston

Dear Sir:

There seems to be considerable confusion among many physicians concerning the nature of the examination required by Chapter 601, as amended by Chapter 697, of the Acts of 1941, "An Act Relative to the Filing of Notices of Intention of Marriage."

The act requires a health examination before city and town clerks and registrars may accept filing of notices of intention of marriage. That part of the law which describes the examination required reads as follows: "If such physician, in making such examination, discovers evidence of any infectious disease declared by the state department of public health to be dangerous to the public health. . . ." The examination is further defined by the next sentence, which reads, "Such examination shall include a standard serological test for syphilis. . . ."

Since the list of infectious diseases declared by the Department of Public Health to be dangerous to the public health includes some forty diseases, many of which require elaborate laboratory examinations for their detection, a complete examination for each of these diseases would be impractical except in those cases in which symptoms or signs definitely indicate its presence.

Our own impression is that the law specifically requires only a laboratory test for syphilis and that any other laboratory or diagnostic test should be made only when the examination suggests an infectious disease for the detection of which an additional diagnostic test is necessary.

We wonder if you would be willing to interpret those sections of the act which bear upon the examination required, for possible release to the *New England Journal of Medicine*.

Very truly yours,

PAUL J. JAKMAUH, M.D.
Commissioner of Public Health

December 1, 1941

Paul J. Jakmauh, M.D.
Commissioner of Public Health
State House
Boston

Dear Sir:

You have written to ask my opinion as to the interpretation of those provisions of G. L., c. 207, s. 20B — enacted as St. 1941, c. 601, s. 1, and amended by St. 1941, c. 697 — which deal with an examination to be made by a physician of the parties to an intended marriage. The pertinent provisions of the statute are as follows:

> Except as hereinafter provided, such notice of intention of marriage shall not be accepted by the clerk or registrar until he has received from each party to the intended marriage a certificate signed by a qualified physician registered and practising in the commonwealth or a commissioned medical officer on active service in the armed forces of the United States who has examined such party as hereinafter provided. If such physician, in making such examination, discovers evidence of any infectious disease declared by the state department of public health to be dangerous to the public health, he shall inform both parties of the nature of such infectious disease and of the possibilities of transmitting the same to his or her marital partner or to their children. Such examination shall include a standard serological test for syphilis and said test shall be made by a laboratory of said department or by a laboratory approved by it for such test.
>
> The examination of such physician and the laboratory test shall be made not more than thirty days before the filing of the notice of intention of marriage. . . .

You state that there is considerable confusion among physicians concerning the nature of the examination required by this statute, and that this arises from their uncertainty as to whether or not the parties must be examined for all infectious diseases declared by the Department of Public Health to be dangerous to the public health.

At the time St. 1941, c. 601, was enacted, some forty infectious diseases, including syphilis, had been declared by your department, pursuant to G. L., c. 111, s. 6, to be dangerous to the public health. You have furnished me with a list of these, which is still in force, and you inform me that for the detection of many of them an elaborate laboratory examination is necessary.

In my opinion syphilis is the only one of these infectious diseases the presence or absence of which must be determined, in the manner prescribed, as a part of the examination required by G. L., c. 207, s. 20B, as amended. I am led to this conclusion primarily by the terms of the statute, which provide that the physician shall inform the parties regarding any of these diseases of which he "discovers evidence" in making his examination, but which require, in the case of syphilis, that the examination shall include a specific test to be made in a specified laboratory.

Moreover, that only one laboratory test must be made seems manifest from the provision that the "examination by such physician and *the laboratory test*" should be made not more than thirty days before the filing of the notice of intention. Yet, as you inform me, many of the diseases referred to cannot be detected without various laboratory tests. This fact furnishes added support to the conclusion that the physician is not required to determine the presence of any of the infectious diseases other than syphilis, as distinguished from merely discovering evidence of such diseases.

If the Legislature had intended the examination to determine the presence or absence of every disease in the category named, it undoubtedly would have so provided, and the expression of the requirement of a laboratory test as to one disease indicates that its omission as to the other diseases was intentional. (Cf. *Boston & Albany R. R. Co.* v. *Commonwealth*, 296 Mass. 426, 434.)

On the other hand, I believe that the physician's examination should be of such nature as to disclose any evidence of the infectious diseases referred to, which a physician could reasonably be expected to discover without a laboratory test. My opinion in this regard is based upon the manifest purpose of the statute, which is to protect the public health by measures which are reasonably calculated to deter the transmission, incident upon marriage, of the designated infectious diseases. The method adopted is a compulsory examination by a physician, including one laboratory test. The only object of the examination is to enable the physician to enlighten the parties to the intended marriage regarding the nature and transmissibility of any infectious disease, in the specified group, of which he discovers evidence. Plainly, in order to carry out the purpose of the statute, the physician's examination should be directed toward the discovery of such evidence.

Very truly yours,
ROBERT T. BUSHNELL
Attorney General

State House
Boston

* * *

CHAPTER 601, AS AMENDED BY CHAPTER 697, OF THE ACTS OF 1941

An Act further regulating the filing of notices of intention of marriage, and the delivery of certificates of such intention and the return of unused certificates.

Section 1. Chapter two hundred and seven of the General Laws is hereby amended by inserting after section twenty A, inserted by section three of chapter two hundred and sixty-nine of the acts of nineteen hundred and thirty-nine, the following new section: — Section 20B. Except as hereinafter provided, such notice of intention of marriage shall not be accepted by the clerk or registrar until he has received from each party to the intended marriage a certificate signed by a qualified physician registered and practicing in the commonwealth or a commissioned medical officer on active service in the armed forces of the United States who has examined such party as hereinafter provided. If such physician, in making such examination, discovers evidence of any infectious disease declared by the state department of public health to be dangerous to the public health, he shall inform both parties of the nature of such infectious disease and of the possibilities of transmitting the same to his or her marital partner or to their children. Such examination shall include a standard serological test for syphilis and said test shall be made by a laboratory of said department or by a laboratory approved by it for such test.

Such certificate by a physician registered and practicing in the commonwealth shall read as follows: —

I (name and address of physician), a registered physician of (city or town) in the commonwealth of Massachusetts declare that on (month, day, year) I examined (name and address of party) in accordance with section twenty B of chapter two hundred and seven of the General Laws. This certificate is made under the penalties of perjury.

Such certificate by a commissioned medical officer on active service in the armed forces of the United States shall read as follows: — I (name and address of physician) a (rank or title) serving in the (name of unit) of the United States on oath declare that on (month, day, year) I examined (name and home address of party) in accordance with section twenty B of chapter two hundred and seven of the General Laws of the commonwealth of Massachusetts.

Blank forms of certificates required under this section shall be furnished to city and town clerks by the department of public health.

The examination by such physician and the laboratory test shall be made not more than thirty days before the filing of the notice of intention of marriage. Whoever fails to comply with this section shall be punished by a fine of not less than ten nor more than one hundred dollars. In extraordinary or emergency cases where the death of either party is imminent or where the female is near the termination of her pregnancy, upon the authoritative request of a minister, clergyman, priest, rabbi or attending physician, the clerk or registrar may accept such notice of intention without having received the physician's certificate hereinbefore referred to.

Section 2. Section twenty-eight of said chapter two hundred and seven, as appearing in the Tercentenary Edition, is hereby amended by striking out, in the third and in the eleventh lines, the words "six months" and inserting in place thereof, in each instance, the words: — sixty days, — so as to read as follows: — Section 28. On or after the fifth day from the filing of notice of intention of marriage, except as otherwise provided but not in any event later than sixty days after such filing, the clerk or registrar shall deliver to the parties a certificate signed by him, specifying the date when notice was filed with him and all facts relative to the marriage which are required by law to be ascertained and recorded, except those relative to the person by whom the marriage is to be solemnized. Such certificate shall be delivered to the minister or magistrate before whom the marriage is to be contracted, before he proceeds to solemnize the same. If such certificate is not sooner used, it shall be returned to the office issuing it within sixty days after the date when notice of intention of marriage was filed.

Section 3. Section fifty-seven of said chapter two hundred and seven, as so appearing, is hereby amended by striking out, in the second and in the fourth and fifth lines, the words "six months" and inserting in place thereof, in each instance, the words: — sixty days, — so as to read as follows: — Section 57. Whoever performs a ceremony of marriage upon a certificate more than sixty days after the filing of the notice of intention of marriage as set forth in such certificate, and whoever having taken out such certificate and not having used it fails to return it, within sixty days after such filing, to the office issuing the same, shall be punished by a fine of not more than ten dollars.

DISTORTED PUBLICITY

To the Editor: A great deal of publicity has been given to my paper in *Science* (**94**:2437, 1941), entitled "Clinical Achromotrichia," a preliminary report. Again, newspaper and magazine publicity is given on the paper given by me, in collaboration with Dr. Stefan Ansbacher, at a meeting of the Society of Experimental Biology and Medicine on November 12, 1941, at the New York Hospital, New York City. Photographs were shown of Dr. Ansbacher and myself in a review of medical progress by Waldemar B. Kaempffert in *Look* magazine (December 31, 1941). Many facts have been distorted and many preliminary findings that were mentioned were amplified, resulting in misrepresentation and unfair comment.

It is my purpose in this letter to ask the medical profession to realize that newspaper and magazine reports are written for the public, many times resulting in distortion and misquotes as to the facts. Further investigation is being carried on and will be published in a recognized medical journal as soon as enough laboratory and clinical results are compiled. The work that has been done and is being done is sincere, scientific and ethical. I am attempting in every way possible to take care of all requests by the medical profession for material and information concerning treatment.

It is best to state that para-aminobenzoic acid is becoming more and more difficult to obtain because of priority legislation, its mother substance being toluene, which is also necessary in the production of trinitrotoluene.

BENJAMIN F. SIEVE, M.D.

371 Commonwealth Avenue
Boston

BOOK REVIEWS

Field Service Notes for Regimental Officers. By E. M. Colwell, C.B.E., D.S.O., T.D., F.R.C.S., A.D.M.S. 16°, cloth, 148 pp., with 29 illustrations. London: J. and A. Churchill, Limited, 1940.

This is a practical, pocket-size book with helpful directions to junior line officers of the new British Army. Officers of the Medical Corps also will find much that is worth while. Covering the duties of officers in field service and in charge of troops in billets and camps, it fills a valuable place, and should greatly aid the younger line officers in caring for the welfare, health and comfort of British soldiers under their charge.

Dietetics for the Clinician. By the late Milton A. Bridges, M.D. Fourth edition, thoroughly revised. 8°, cloth, 960 pp., with 83 tables. Philadelphia, Lea and Febiger, 1941. $10.00.

This is a particularly useful book for the physician of today, for he, much more than the practitioner of the past, is expected to understand dietetics as applied to the care of the sick as well as he does pharmacology and materia medica. He must be prepared to discuss diet with his patients as he does drugs, and he must be able to write his order for a diet to the dietitian as intelligently as he writes his prescription to the pharmacist.

This volume, the fourth edition of a work previously developed and edited by the late Dr. Bridges, had been planned by him but had to be completed by his devoted collaborators, all clinicians and teachers in medicine. The result is a book fully informative and readily applicable to all dietary problems in daily practice.